ELK

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2012 - JCR Evaluation Form

SPECIES: Elk

PERIOD: 6/1/2012 - 5/31/2013

HERD: EL320 - FORTIFICATION

HUNT AREAS: 2

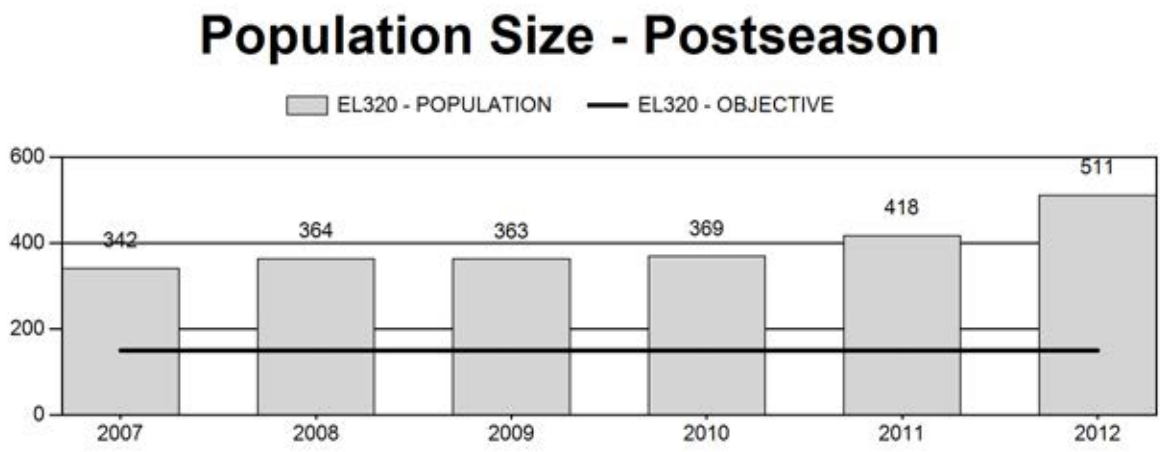
PREPARED BY: ERIKA PECKHAM

	2007 - 2011 Average	2012	2013 Proposed
Population:	371	511	569
Harvest:	50	50	58
Hunters:	80	80	90
Hunter Success:	62%	62%	64%
Active Licenses:	81	80	90
Active License Percent:	62%	62%	64%
Recreation Days:	294	286	295
Days Per Animal:	5.9	5.7	5.1
Males per 100 Females	43	72	
Juveniles per 100 Females	48	77	

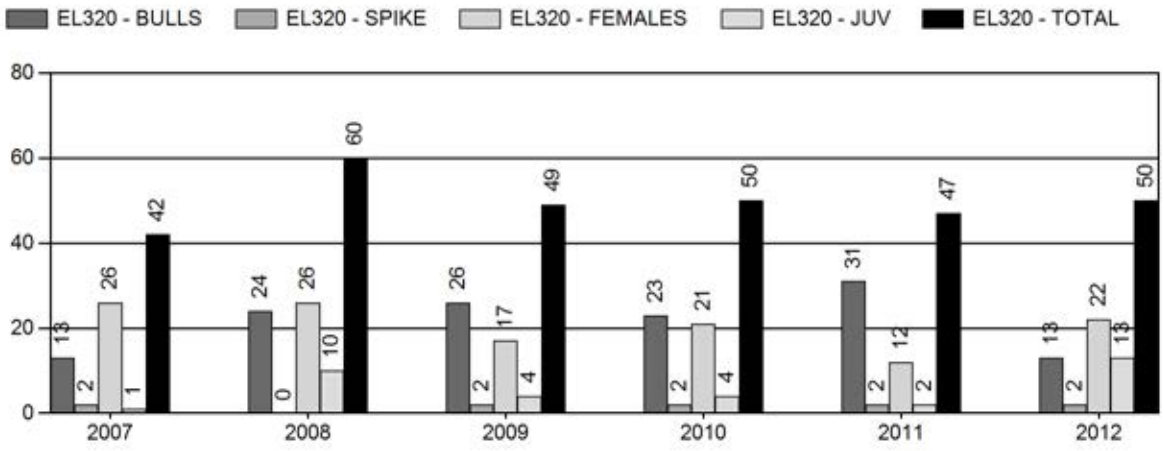
Population Objective:	150
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	241%
Number of years population has been + or - objective in recent trend:	11
Model Date:	05/17/2013

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

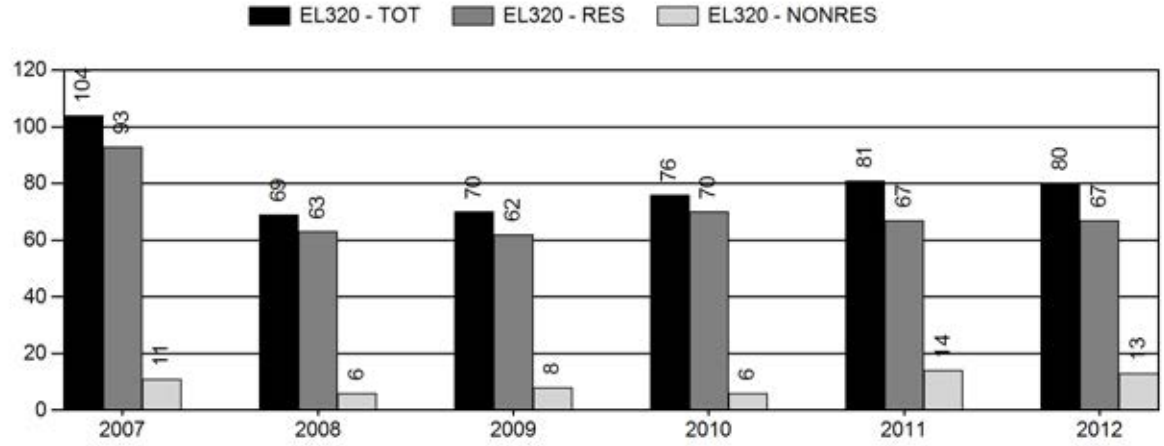
	JCR Year	Proposed
Females ≥ 1 year old:	12%	11.2%
Males ≥ 1 year old:	20%	9.5%
Juveniles (< 1 year old):	7%	0%
Total:	13%	9.1%
Proposed change in post-season population:	-2.9%	11.3%



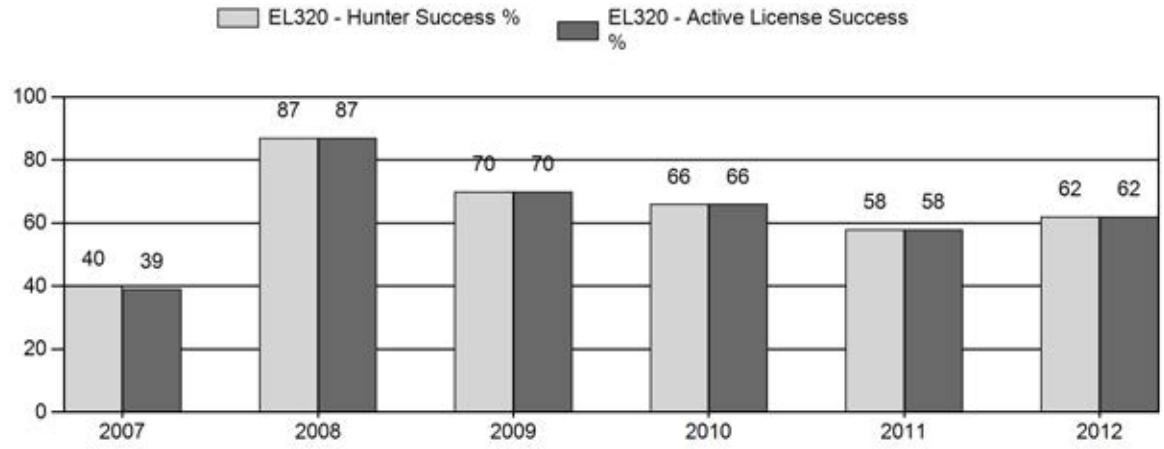
Harvest



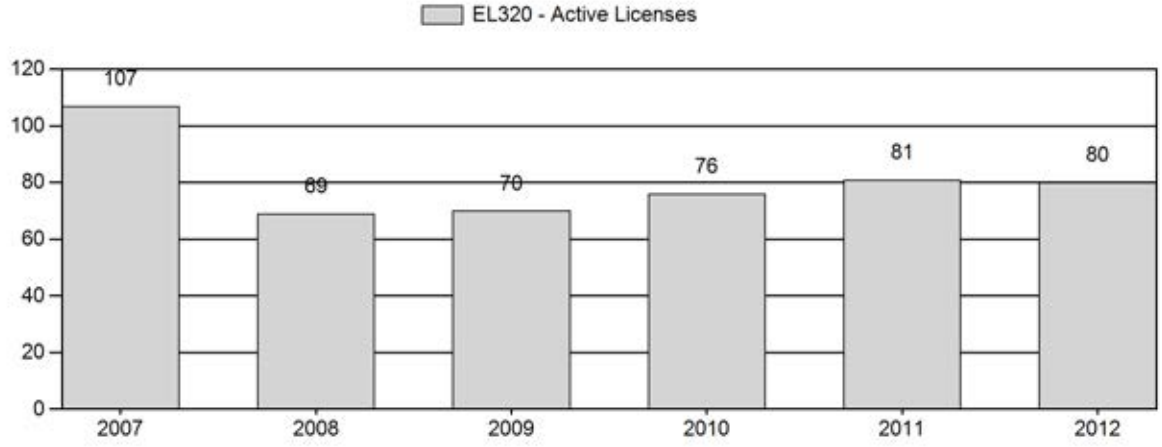
Number of Hunters



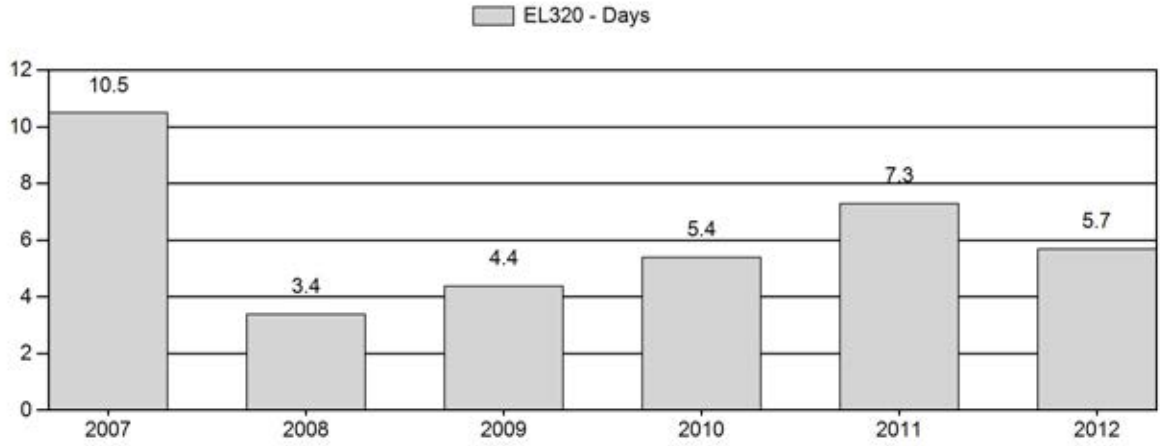
Harvest Success



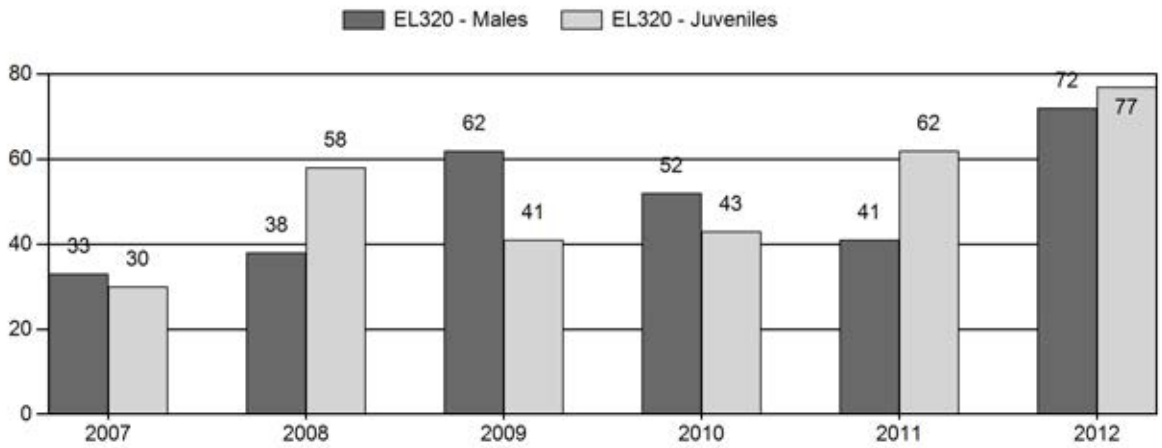
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL320 - FORTIFICATION

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	342	17	6	23	20%	69	61%	21	19%	113	179	25	9	33	± 8	30	± 8	23
2008	364	12	14	26	19%	69	51%	40	30%	135	162	17	20	38	± 9	58	± 12	42
2009	363	1	17	18	31%	29	49%	12	20%	59	188	3	59	62	± 22	41	± 17	26
2010	369	13	31	44	27%	84	51%	36	22%	164	160	15	37	52	± 9	43	± 8	28
2011	418	18	18	36	20%	87	49%	54	31%	177	197	21	21	41	± 8	62	± 10	44
2012	500	32	27	59	29%	82	40%	63	31%	204	215	39	33	72	± 12	77	± 13	45

2013 HUNTING SEASONS
FORTIFICATION ELK HERD (EL320)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	Limitations
2	1	Oct. 21	Oct. 31	30	Limited quota licenses; any elk
	4	Oct. 21	Oct. 31	60	Limited quota licenses; Antlerless elk

Hunt Area	Type	Quota change from 2012
2	4	+10
Herd Unit Total	**4**	**+10**

Management Evaluation

Current Postseason Population Management Objective: 150
Management Strategy: Recreational
2012 Postseason Population Estimate: ~550
2013 Proposed Postseason Population Estimate: ~500

Herd Unit Issues

The management objective for the Fortification Elk Herd Unit is a post-season population objective of 150 elk. The management strategy is recreational management. The objective and management strategy were last revised in 2009.

This herd has great potential for continued growth if access cannot be somewhat improved. Much of the occupied range for this herd includes land administrated by the Bureau of Land Management. Private land is scattered, but also surrounds the herd unit, resulting in a tightly controlled access situation. The opinions of landowners controlling hunting access thus have a great impact on how this herd is managed. Currently, some landowners allowing access to this elk herd seem to be relatively happy with the management direction for this elk herd, and have allowed access to the current number of license-holding hunters. However, the landowners that allow access can only accommodate around 90 licenses holders, so unless there is improved access, issuing more licenses will be futile.

The 2012 post-season population estimate was about 500 individuals, which is the highest estimate this herd has experienced since it has first been modeled. It is probable that this number is inflated, however the herd is most likely trending upwards. Since 2002 the population has been steadily increasing. Both aeriall classifications and increasing calf:cow ratios support this observation.

Weather

Weather conditions throughout 2012 and into 2013 were extremely dry and warmer than normal. The winters of 2011-2012 and 2012-13 were mild and did not see much for snow accumulation. Although the spring and summer of 2012 were drier than normal, it appears that the cow to calf ratio has not suffered.

Habitat

There are no herbaceous or shrub habitat transect located within in this herd unit. The nearest transect is the SA creek sagebrush transect. The utilization is typically very light on this transect. In the fall of 2012, the transect survey showed the average leader growth to be 35mm, which is higher than anticipated, given the drought conditions that were experienced in the 2012 growing season.

Field Data

This herd is classified aerially, and with the exception of 2009, the number of animals observed has increased each year since 2007. In 2012 there were 204 individuals that were classified, which is the highest number detected since this herd has been monitored. In 2012 the calf to cow ratio was up to 77, which is the highest this herd has seen since classifications have been conducted.

One difficulty associated with the management of this herd is achieving adequate sample sizes during classification surveys. The elk can be difficult to locate under dense juniper cover and frequently they do not run when disturbed by survey flights. With these habitat factors, siteability is likely decreased and it is probable that there are a fair numbers of animals that are not detected during classification.

Harvest

In 2012 there were 80 licenses available, 30 Type 1 and 50 Type 4. In an effort to slow down herd growth 30 Type 1, and 60 Type 4 licenses will be issued in 2013. The traditional season in this hunt area has been from October 21 to October 31. This season time and length seems to be adequate to allow a reasonable harvest and works well for the private landowners who allow public access. Hunter success in this herd unit has averaged 68% over the last 5 years, with similar success in preceding years as well. 2012 had an overall success rate of 62%.

Population

The "Constant Juvenile – Constant Adult Mortality Rate" (CJCA) spreadsheet model was chosen to use for the post season population estimate of this herd. This model equals the SCA-CJ model with the lowest AIC value (103) and appears to depict the trend that is occurring. It is possible that the population estimate of ~550 is slightly inflated (fair model), although the increasing

trend is likely accurate. Based on landowner input and classification surveys, it estimated that the population is likely between 250-350 elk.

Management Summary

Both BLM and Game and Fish staff have dedicated efforts to studying the behavior and movements of this herd with an ongoing radio-collar study. In March of 2011, 35 cow elk were fitted with GPS collars. Currently 31 remain, as 2 collared elk were harvested in the hunting season of 2011 and 2 more in the 2012 season. A graduate student is collecting data to study the effects of energy development and disturbance on movements of the herd. Final results of this study should be available in the near future.

Several nongovernmental organizations have taken a keen interest in the area and the elk herd in particular. The viewpoint of many of these groups is that elk should be more protected within the herd unit. However, expanding coal bed methane development in the herd unit has reduced the total amount of effective habitat for elk. Harvesting elk towards objective should help reduce risks of overcrowding and degradation of suitable remaining habitat while development occurs. A high priority is being placed upon maintaining habitat quality during development so that the area can continue to support a healthy herd of elk after energy development has ceased.

If we attain the projected harvest of 58 individuals, it is likely that the population will only slightly increase. Based on the population model, we predict a 2013 post-season population of around 570 individuals. However, if the actual population is closer to the field estimate, the projected harvest should hold the population steady. Game and Fish meets with landowners within this herd unit on an annual basis. Landowners within the Fortification Elk Herd Unit have been informed that the antlerless elk license quota may be inadequate to offset the growth of this herd. Due to the access issues, a greater license increase is opposed. Given the high calf ratios coupled with limited licenses, it is unlikely that production will be slowed down with the proposed quotas.

INPUT	
Species:	Elk
Biologist:	Erika Peckham
Herd Unit & No.:	Fortification
Model date:	02/20/13

☐ Clear form

MODELS SUMMARY		Fit	Relative AICc	Check best model to create report	Notes
CJ,CA	**Constant Juvenile & Adult Survival**	94	103	☑ CJ,CA Model	
SCJ,SCA	**Semi-Constant Juvenile & Semi-Constant Adult Survival**	94	103	☐ SCJ,SCA M	
TSJ,CA	**Time-Specific Juvenile & Constant Adult Survival**	232	336	☐ TSJ,CA Model	
TSJ,CA,MSC	**Time-Specific Juv, Constant Adult Survival, Male survival coefficient**	76	191	☐ TSJ,CA,MSC Mode	

Population Estimates from Top Model

Year	Posthunt Population Est.		Trend Count	Predicted Prehunt Population				Predicted Posthunt Population				Objective
	Field Est	Field SE		Juveniles	Total Males	Females	Total	Juveniles	Total Males	Females	Total	
1993				63	71	190	324	56	18	161	235	150
1994				61	40	180	281	55	12	158	225	150
1995				91	34	177	302	90	34	162	286	150
1996				120	69	195	385	120	69	195	385	150
1997				84	116	239	440	84	116	239	440	150
1998				90	147	268	505	63	114	217	394	150
1999				137	137	238	512	118	82	186	387	150
2000				81	128	230	438	72	70	180	322	150
2001				63	97	205	366	59	77	171	307	150
2002				67	99	191	358	51	81	127	259	150
2003				73	99	145	318	72	84	137	294	150
2004				49	111	164	324	49	85	155	289	150
2005				66	103	171	340	61	86	158	305	150
2006				123	109	180	411	110	91	160	361	150
2007				53	134	201	388	52	117	172	342	150
2008				104	136	190	430	93	109	161	364	150
2009				77	144	195	417	73	114	176	363	150
2010				81	141	202	424	77	113	179	369	150
2011				122	141	206	469	120	105	193	418	150
2012				178	151	237	566	163	134	213	511	150
2013				162	197	274	633	148	178	243	569	150
2014												150
2015												150
2016												150
2017												150
2018												150
2019												150
2020												150
2021												150
2022												150
2023												150
2024												150
2025												150

Survival and Initial Population Estimates

Year	Annual Juvenile Survival Rates			Annual Adult Survival Rates		
	Model Est	Field Est	SE	Model Est	Field Est	SE
1993	0.80			0.98		
1994	0.80			0.98		
1995	0.80			0.98		
1996	0.80			0.98		
1997	0.80			0.98		
1998	0.80			0.98		
1999	0.80			0.98		
2000	0.80			0.98		
2001	0.80			0.98		
2002	0.80			0.98		
2003	0.80			0.98		
2004	0.80			0.98		
2005	0.80			0.98		
2006	0.80			0.98		
2007	0.80			0.98		
2008	0.80			0.98		
2009	0.80			0.98		
2010	0.80			0.98		
2011	0.80			0.98		
2012	0.80			0.98		
2013	0.80			0.98		
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Parameters:	Optim cells
Juvenile Survival =	0.800
Adult Survival =	0.980
Initial Total Male Pop/10,000 =	0.002
Initial Female Pop/10,000 =	0.016

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Total Bulls Adjustment Factor	75%

Year	Classification Counts: Juvenile/Female Ratio: Derived Est	Juvenile/Female Ratio: Field Est	Juvenile/Female Ratio: Field SE	Total Male/Female Ratio: Derived Est	Total Male/Female Ratio: Field Est w/ bull adj	Total Male/Female Ratio: Field Est w/o bull adj	Total Male/Female Ratio: Field SE	Harvest: Juv	Harvest: Yrl males	Harvest: 2+ Males	Harvest: Females	Harvest: Total Harvest	Segment Harvest Rate (% of Prehunt Segment): Total Males	Segment Harvest Rate (% of Prehunt Segment): Females
1993		35.00	7.69	11.41	16.67	12.50	4.19	6	23	25	27	81	74.3	15.6
1994		35.06	7.84	7.49	27.71	20.78	5.71	5	12	14	20	51	70.8	12.2
1995		55.56	17.89	20.75	59.26	44.44	15.42	1	0	0	13	14	0.0	8.1
1996		61.54	19.55	35.40	107.69	80.77	23.70	0	0	0	0	0	0.0	0.0
1997		35.21	8.19	48.37	22.54	16.90	5.28	0	0	0	0	0	0.0	0.0
1998		29.23	7.62	52.71	47.18	35.38	8.58	24	0	30	47	101	22.4	19.3
1999		63.64	15.38	44.24	63.64	47.73	12.66	17	3	47	47	114	40.1	21.8
2000		40.00	10.09	38.68	53.33	40.00	10.09	8	9	44	45	106	45.6	21.6
2001		34.29	11.47	45.14	45.71	34.29	11.47	4	5	13	31	53	20.4	16.6
2002		39.62	10.22	63.17	42.77	32.08	8.94	15	4	13	58	90	18.8	33.4
2003		52.63	11.87	60.92	44.44	33.33	8.83	1	0	14	7	22	15.5	5.3
2004		31.71	10.09	54.64	39.02	29.27	9.61	0	3	21	8	32	23.8	5.4
2005		38.71	13.16	54.40	81.72	61.29	17.86	4	2	13	12	31	16.1	7.7
2006		69.14	12.02	57.11	59.26	44.44	8.90	11	1	15	18	45	16.2	11.0
2007		30.43	7.59	68.02	44.44	33.33	8.03	1	2	13	26	42	12.4	14.3
2008		57.97	11.52	67.87	50.24	37.68	8.67	10	0	24	26	60	19.5	15.1
2009		41.38	14.20	64.40	82.76	62.07	18.62	4	2	26	17	49	21.3	9.6
2010		42.86	8.54	63.16	69.84	52.38	9.75	4	2	23	21	50	19.6	11.4
2011		62.07	10.75	54.52	55.17	41.38	8.20	2	2	31	12	47	25.7	6.4
2012		76.83	12.87	63.21	95.93	71.95	12.28	13	2	13	22	50	10.9	10.2
2013		60.71	10.78	73.42	73.02	54.76	10.04	13	2	15	28	58	9.5	11.2
2014														
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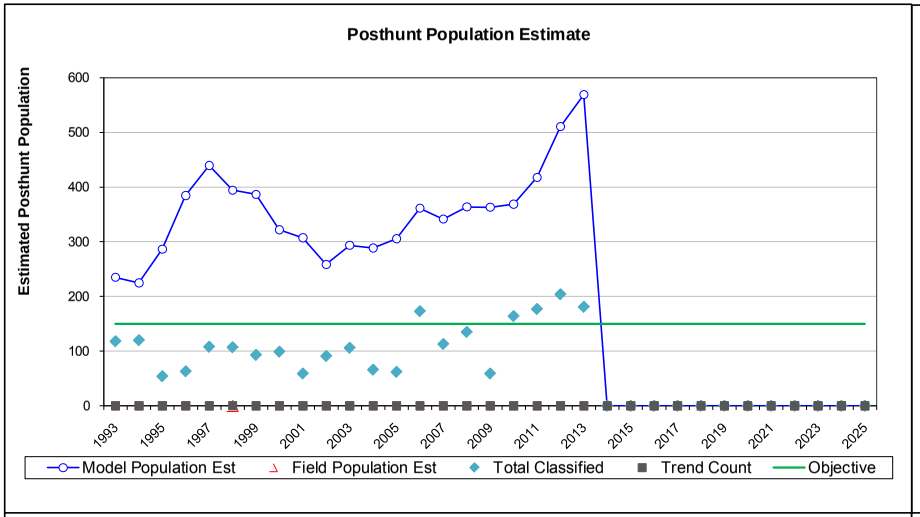
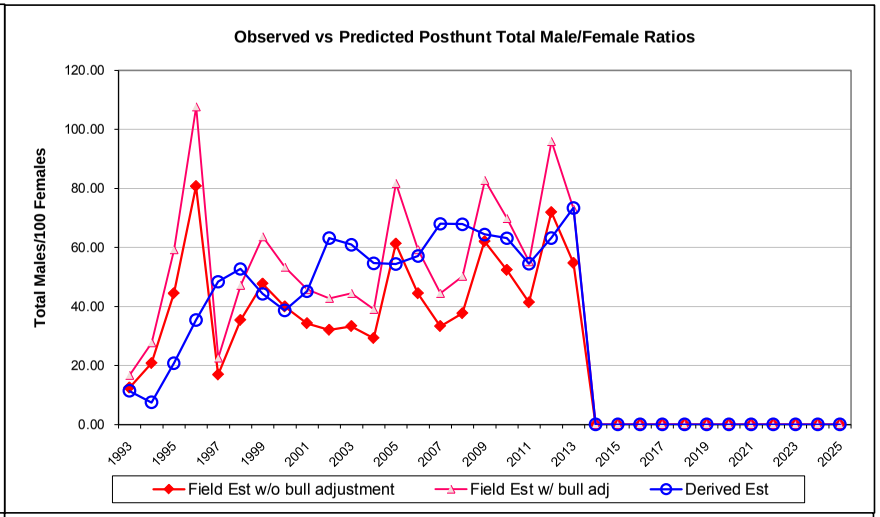
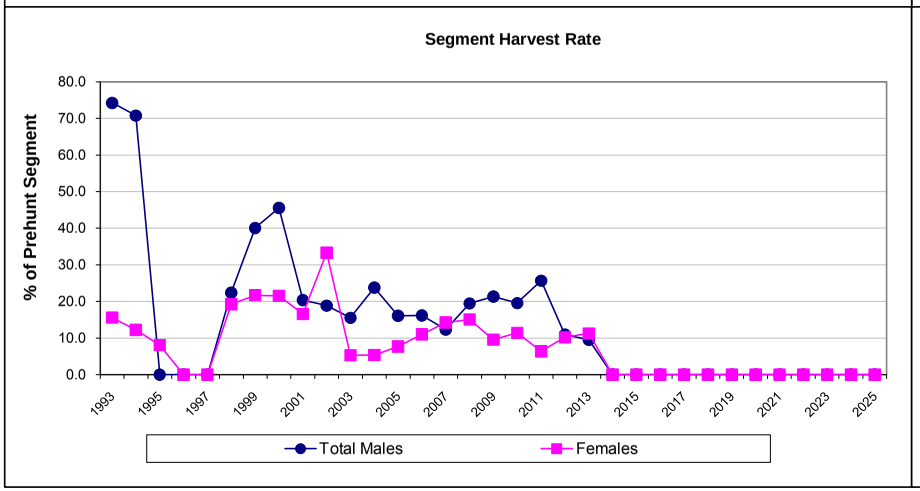
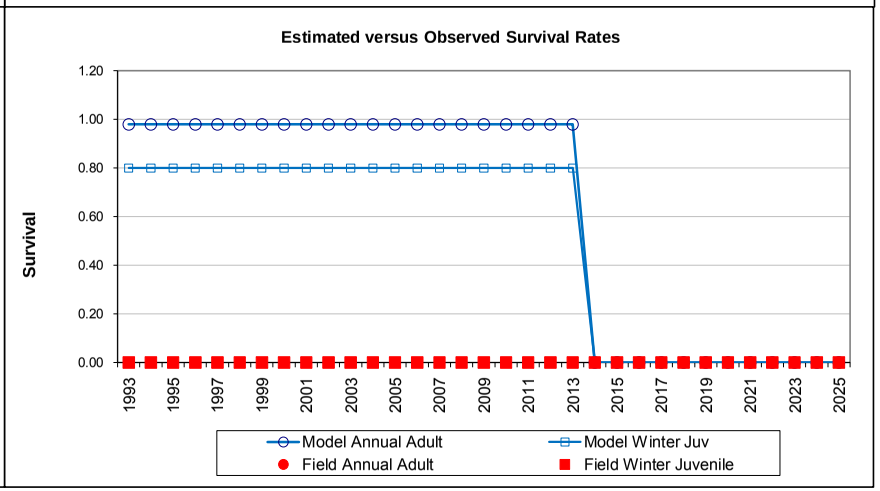
FIGURES









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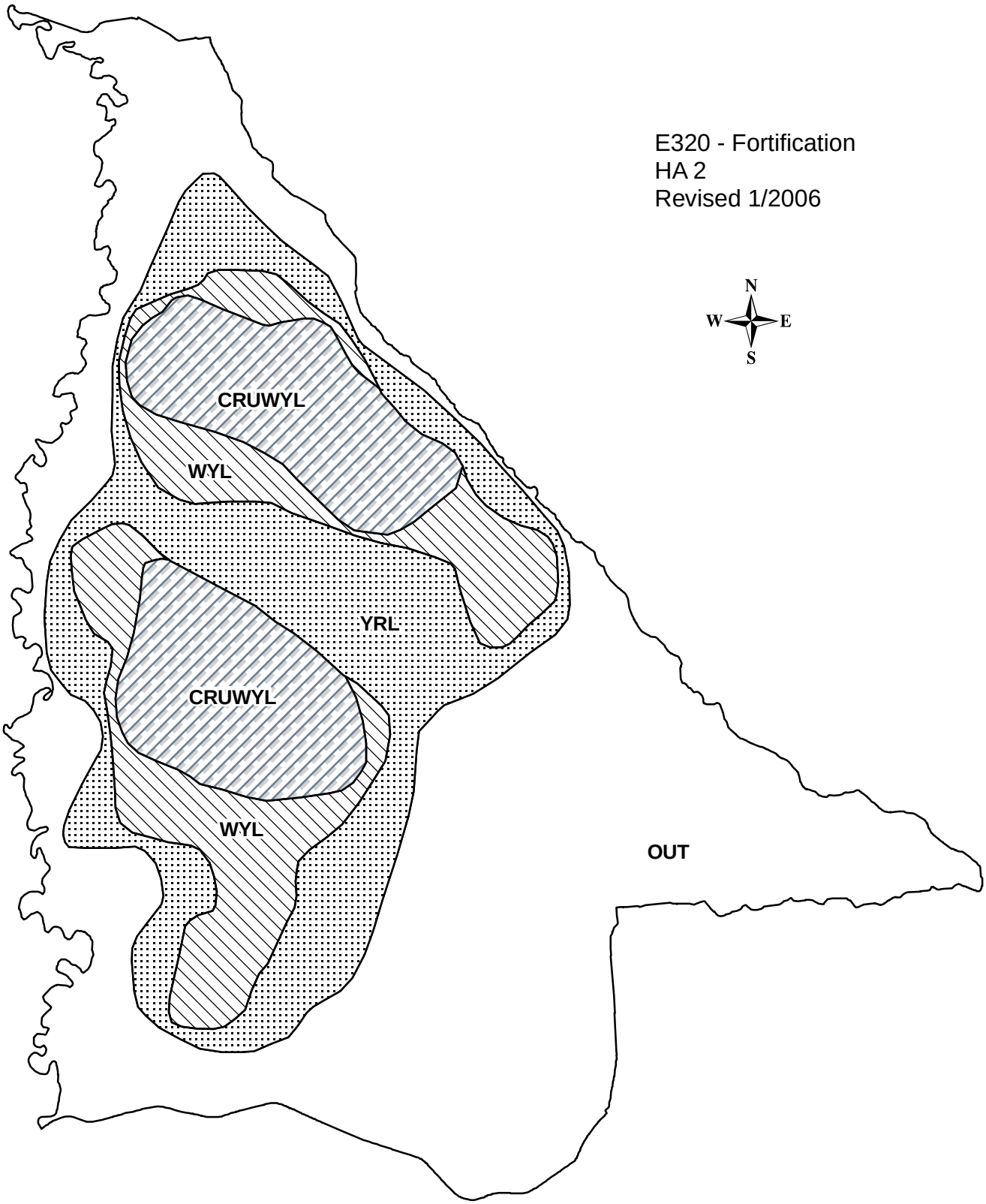
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2012 - JCR Evaluation Form

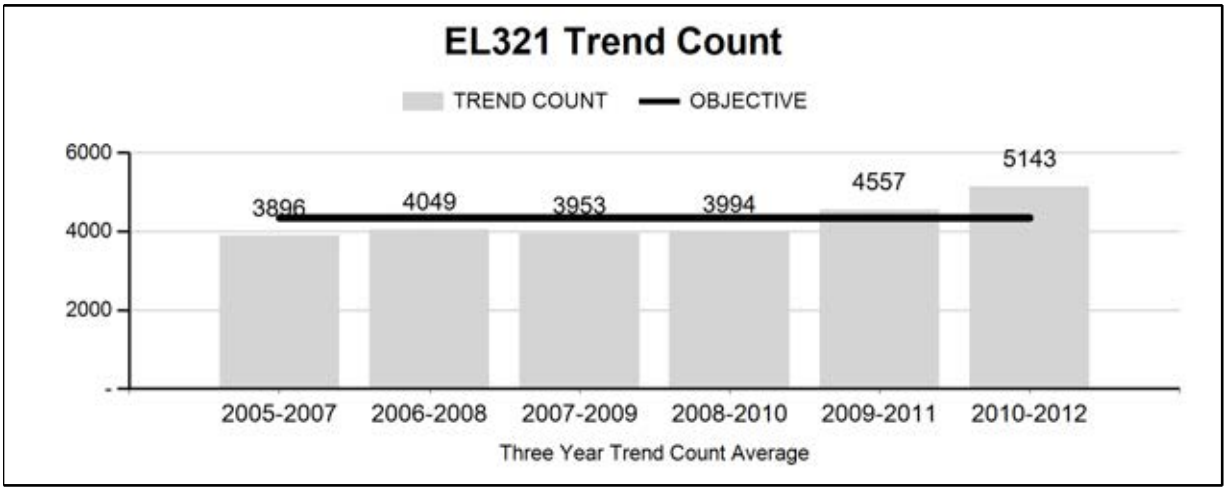
SPECIES: Elk
PERIOD: 6/1/2012 - 5/31/2013
HERD: EL321 - NORTH BIGHORN
HUNT AREAS: 35-40
PREPARED BY: TIM THOMAS

	2007 - 2011 Average	2012	2013 Proposed
Trend Count:	4,406	5,259	5,000
Harvest:	1,084	1,395	1,450
Hunters:	3,910	4,127	4,200
Hunter Success:	28%	34%	35%
Active Licenses:	3,985	33%	4,350
Active License Percentage:	27%	33%	33%
Recreation Days:	28,388	30,209	32,000
Days Per Animal:	26.2	21.7	22.1
Males per 100 Females:	22	27	
Juveniles per 100 Females	50	52	

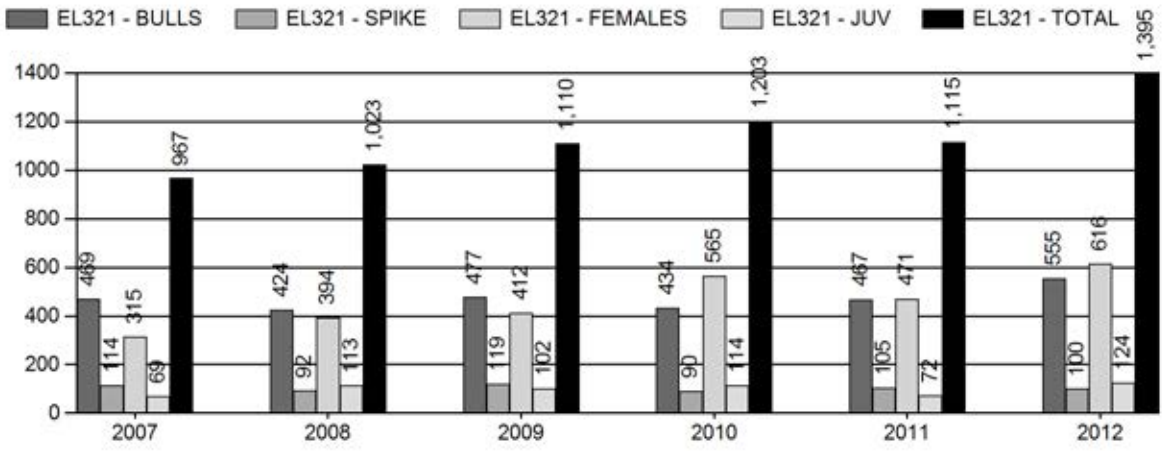
Trend Based Objective (± 20%)	4,350 (3480 - 5220)
Management Strategy:	Special
Percent population is above (+) or (-) objective:	21%
Number of years population has been + or - objective in recent trend:	10

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

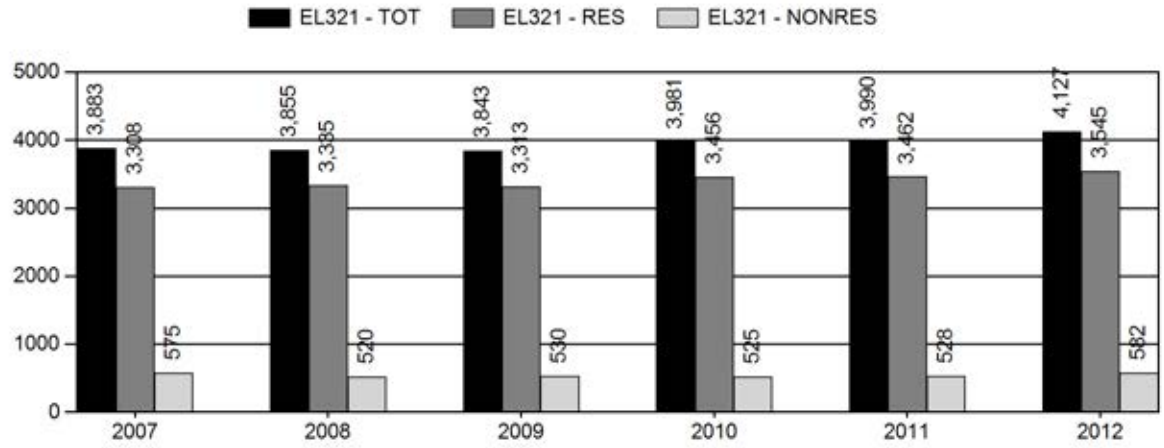
	JCR Year	Proposed
Females ≥ 1 year old:	16%	18%
Males ≥ 1 year old:	38%	34%
Juveniles (< 1 year old):	7%	6%



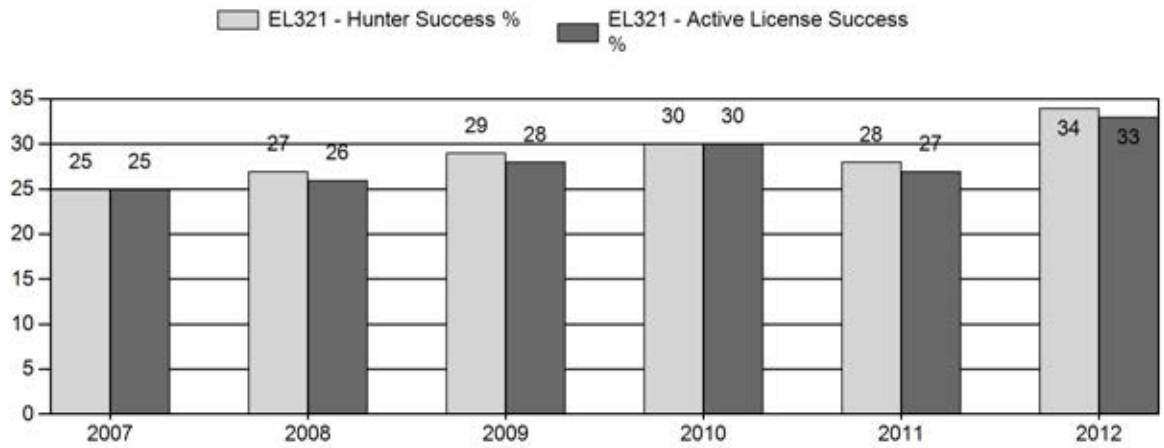
Harvest



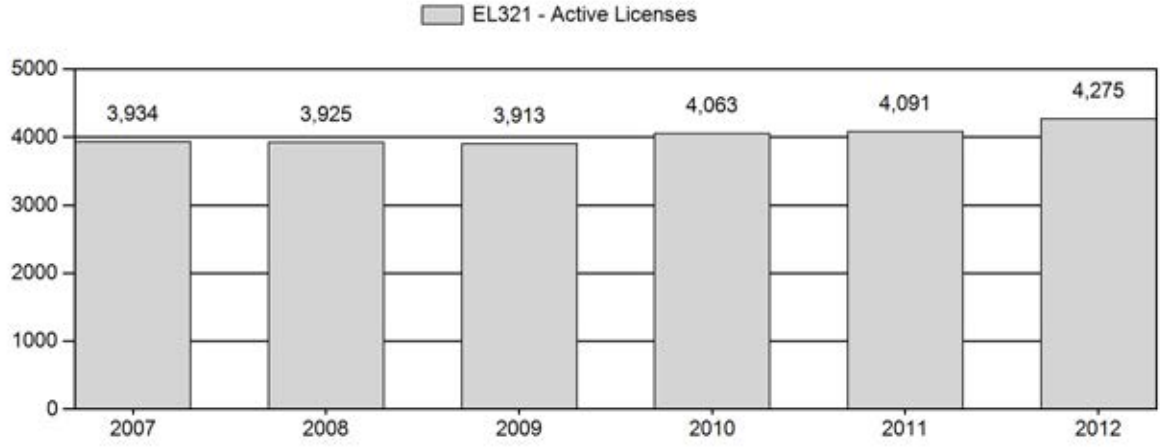
Number of Hunters



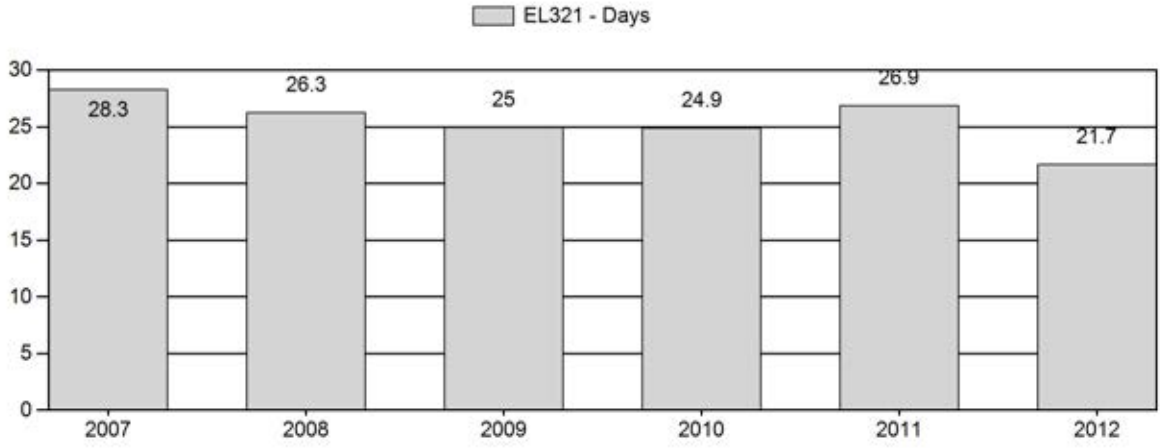
Harvest Success



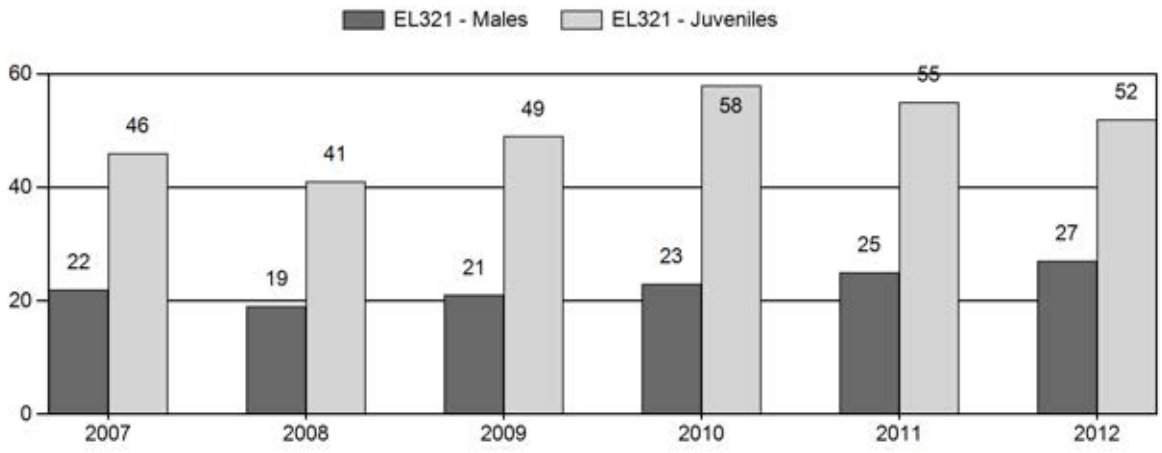
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL321 - NORTH BIGHORN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	4,875	113	80	193	13%	864	60%	395	27%	1,452	639	13	9	22	± 2	46	± 3	37
2008	4,650	168	66	234	12%	1,257	63%	513	26%	2,004	538	13	5	19	± 1	41	± 2	34
2009	5,530	154	79	233	13%	1,092	59%	538	29%	1,863	694	14	7	21	± 0	49	± 0	41
2010	5,250	157	76	233	13%	1,027	55%	595	32%	1,855	907	15	7	23	± 0	58	± 0	47
2011	5,500	160	103	263	14%	1,059	55%	587	31%	1,909	853	15	10	25	± 2	55	± 3	44
2012	5,400	148	111	259	15%	977	56%	509	29%	1,745	791	15	11	27	± 2	52	± 3	41

2013 HUNTING SEASONS
NORTH BIGHORN ELK HERD (EL321)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	Limitations
35	1	Oct. 15	Nov. 5	150	Limited quota licenses; antlered elk
	4	Oct. 15	Dec. 15	150	Limited quota licenses; antlerless elk
	6	Oct. 15	Dec. 15	150	Limited quota licenses; cow or calf elk valid off national forest
	9	Sep. 1	Sep. 30	50	Limited quota licenses; any elk, archery only
36		Oct. 15	Nov. 5		General license; antlered elk
	4	Oct. 15	Nov. 30	200	Limited quota licenses; antlerless elk
	6	Oct. 15	Nov. 5	200	Limited quota licenses; cow or calf
	9	Sep. 1	Sep. 30	50	Limited quota licenses; any elk, archery only
37		Oct. 15	Nov. 5		General license; any elk
	6	Sep. 1	Sep. 30	400	Limited quota licenses; cow or calf valid north of Wolf Creek Trail (U.S.F.S. Trail 001) on national forest
		Oct. 1	Nov. 30		Unused Area 37 Type 6 licenses valid in the entire area
		Dec. 1	Dec. 15		Unused Area 37 Type 6 licenses valid south or east of Little Goose Creek
	9	Sep. 1	Sep. 30	150	Limited quota licenses; any elk valid south of Wolf Creek Trail (U.S.F.S. Trail 001) or off national forest, archery only
38	1	Oct. 15	Nov. 5	400	Limited quota licenses; any elk
		Nov. 6	Nov. 15		Unused Area 38 Type 1 licenses valid for antlerless elk
	4	Oct. 1	Oct. 14	500	Limited quota licenses; antlerless elk
		Oct. 15	Nov. 15		Unused Area 38 Type 4 licenses valid on private land or north of Columbus Creek, the Fools Creek Road (U.S.F.S. Road 168), the Burgess Road (U.S.F.S. 15) to Burgess Junction, and U.S. Highway 14A
	9	Sep. 1	Sep. 30	250	Limited quota licenses; any elk, archery only

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	Limitations
39	1	Oct. 15	Nov. 4	100	Limited quota licenses; any elk
		Nov. 5	Nov. 15		Unused Area 39 Type 1 licenses valid for antlerless elk
	2	Oct. 15	Nov. 4	75	Limited quota licenses; antlered elk
	4	Oct. 1	Nov. 15	75	Limited quota licenses; antlerless elk
	9	Sep. 1	Sep. 30	70	Limited quota licenses; any elk, archery only
40	1	Oct. 15	Nov. 4	175	Limited quota licenses; any elk
	4	Oct. 15	Dec. 15	200	Limited quota licenses; antlerless elk
	5	Oct. 1	Dec. 15	100	Limited quota licenses; antlerless elk
	6	Sep. 1	Oct. 14	250	Limited quota licenses; cow or calf valid off national forest
		Oct. 15	Dec. 15		Unused Area 40 Type 6 licenses valid in the entire area
	9	Sep. 1	Sep. 30	75	Limited quota licenses; any elk, archery only
Archery 35, 36, 37		Sep. 15	Sep. 30		Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2012
35	4	+ 50
	6	+ 75
36	6	+ 200
40	4	- 100
	5	+ 100
40	9	+ 25
Herd Unit Total	**4**	**- 50**
	5	**+ 100**
	6	**+ 275**
	9	**+ 25**

Management Evaluation

Current Mid-Winter Trend Management Objective: 4,350
Management Strategy: Special
2012 Winter Trend Count: 5,259
Most Recent 3-year Running Average Winter Trend Count: ~ 5,100

Herd Unit Issues

The management objective for the North Bighorn Elk Herd Unit is a mid-winter trend count objective of 4,350 elk. The management strategy is special management overall, with special management emphasis in limited quota hunt areas (Areas 35, 38, 39 and 40) and recreational management emphasis in general license hunt areas (Areas 36 and 37). The objective and management strategy were last revised in 2012.

There are areas within several hunt areas within this herd unit that act as a refuge for elk, protecting them from harvest. This limits our ability to maintain these groups within desired levels and leads to frustration with the general hunting public as elk move from publically accessible areas to these refuges areas, which are private lands.

In 2012, two hunter harvested elk from Hunt Area 40 tested seropositive for exposure to the *Brucella abortus*, the bacterium that cause the disease Brucellosis in livestock, elk and bison. These elk were tested as part of routine wildlife testing to monitor for Brucellosis. In 2012, only 25 usable blood samples were collect from hunter harvested elk on the west side of the Bighorn Mountains. In an effort to increase usable samples, and to reduce elk numbers, antlerless elk seasons were opened earlier in Hunt Areas 37, 38, 39 and 40.

Weather

The spring and summer of 2012 was warm and dry, resulting in drought conditions throughout most of the region. The winter of 2012-13 has generally been mild and open until late January, when several winter storms dropped snow about weekly and temperature dropped to normal or below normal. Snow during most of April kept elk from moving upslope until mid-late May. Weather does not seem to be having an adverse affect on elk at this time, but it does influence forage production, and hence elk distribution, during all seasons.

Field Data

We counted 5,259 elk on winter ranges during January-February 2013, which is above the established mid-winter count objective. Seasons have been liberalized in recent years to bring elk populations down to more desired levels. Distribution of elk counted is as follow:

Table 1. Desired elk distribution and actual winter counts in North Bighorn Elk Herd Unit during January – February 2013.

Hunt Area	Winter Count Obj.	2012 Winter Count	# Over / Under Objective	3-year (2010-12) Running Mean
35	400	841	+441	782 (+51%)
36	800	914	+114	823 (+3%)
37	800	1,175	+375	1,207 (+21%)
38	1,000	1,255	+255	1,074 (+7%)
39	500	307	-193	383 (-23%)
40	850	767	-83	873 (+3%)
	4,350	5,259	+909	5,143 (+18%)

We classified over 1,700 elk during January – February 2013. We observed 52 calves:100 cows, similar to recent years. This is more than sufficient production to maintain or grow this population. We observed 27 bulls (15 yearling; 11 adult):100 cows. This suggests we have sufficient bulls in this population to breed most receptive females while still providing hunting opportunities. This is likely a minimum bull:cow ratio as adult bulls (> 2 yrs old) tend to winter away from cow/calf/young bull groups, making them more difficult to find during surveys.

According to the hunter satisfaction survey, 62% of 1,079 hunters were satisfied with their elk hunting experience in this herd unit, 22% were dissatisfied, with the balance being neutral. Hunters were more satisfied in the limited quota hunt areas (74%) compared to the general license areas (47%). Nonresident hunters (n=201) tended to be more satisfied (73%) than resident hunters (60%, n=878).

Harvest Data

Estimated hunter harvest increased 25% from 2011, to the highest harvest ever in this herd unit. Bull harvest increased 14% (n=80 elk) while cow harvest increased 31% (n=147 elk) and calf harvest increased 72% (n=52 elk) compared to 2011. Hunter success was estimated at 34%, the highest success rate since the mid-1990s. An increased success rate and reduced effort rate (21.7 days/harvest) suggest elk were very available for harvest in 2012 despite significant snow fall the first week of the general season.

Population

We do not have a spreadsheet model developed for this herd unit because: 1) we do not manage this herd based on a population objective; and 2) up to 20% of this herd migrates onto the Crow Indian Reservation in Montana each fall, where harvest is unregulated and unmonitored. We manage this herd based on mid-winter trend counts. Elk generally winter in traditional areas within this herd unit and we likely count 80-90% of wintering elk in any given year.

Based on elk winter trend counts, it appears this population has increased in recent years (Fig. 1). It is difficult to know how much of this is an actual increase in the population and how much a shift of elk wintering in Wyoming verses Montana. Efforts are being made, through liberalized hunting season strategies, to reduce this population towards objective.

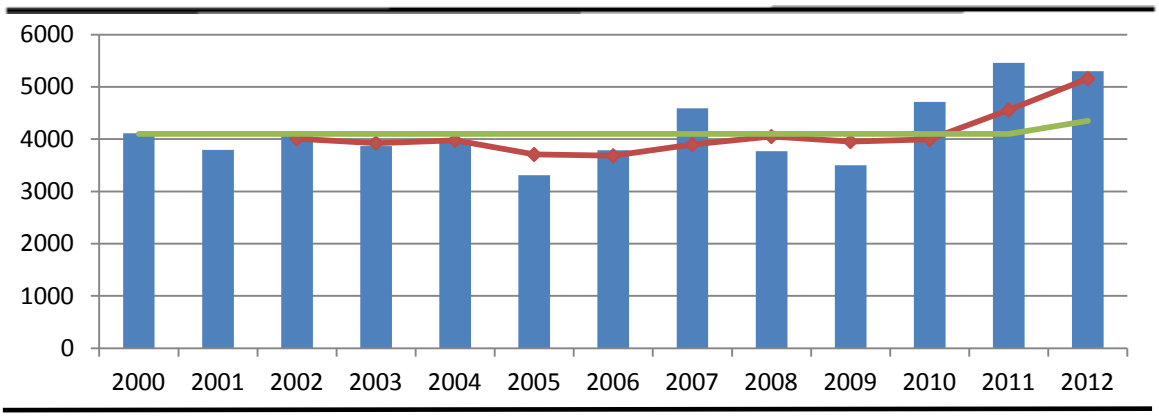


Figure 1. Elk numbers, with 3-year running average (red line), observed during trend and classification surveys from 2000 – 2012 compared to the management objective (green line),

Management Summary

In general, bull elk hunting runs from October 15 thru November 4 or 5 in this herd unit. Cow hunting, either on full price antlerless licenses or reduced price cow or calf licenses, varies among hunt areas based on local management desires. Archery hunting is allowed during the month of September. In Hunt Areas 35, 36, and 37, Type 9 (archery only) license holders can hunt the entire month, while other license holders (i.e. General, Type 1, Type 4 or Type 6 license holders) can hunt starting September 15. In Hunt Areas 38, 39, and 40, archery hunting is by Type 9 license only.

A significant number of elk in Area 35 move to private lands south of U.S. Highway 16 in September to feed on alfalfa meadows. The Area 35 Type 6 season was implemented to target these private land elk, which account for about 50% of the winter count for this hunt area. A Type 6 license was added to Area 36 to encourage increased elk harvest in that area also.

A special early firearm season is open during September in a portion of Area 37. This season strategy is designed to increase harvest as well as block a migration route to private lands, keeping elk on public lands longer. This season has been popular with most hunters and appears to have had at least limited success.

Additional archery opportunity was added to Area 40 with that addition of 25 Type 9 licenses.

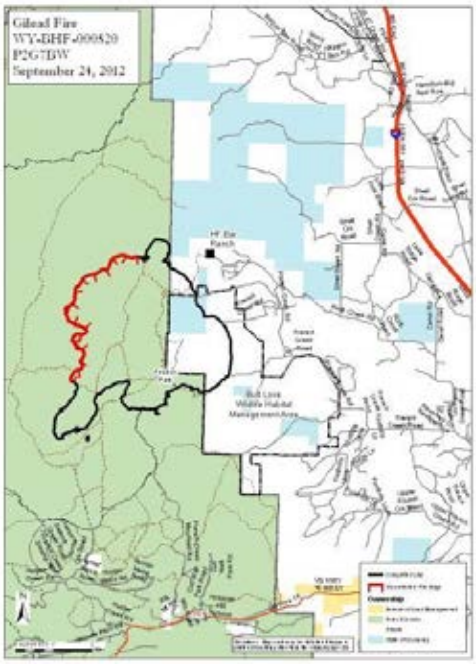
With liberal seasons and favorable hunting conditions, we anticipate a similar harvest in 2013 (~1,450 elk) as in 2012. Continued harvest, especially on cows, should help bring segments of this herd where winter counts exceed management objectives down to desired levels.

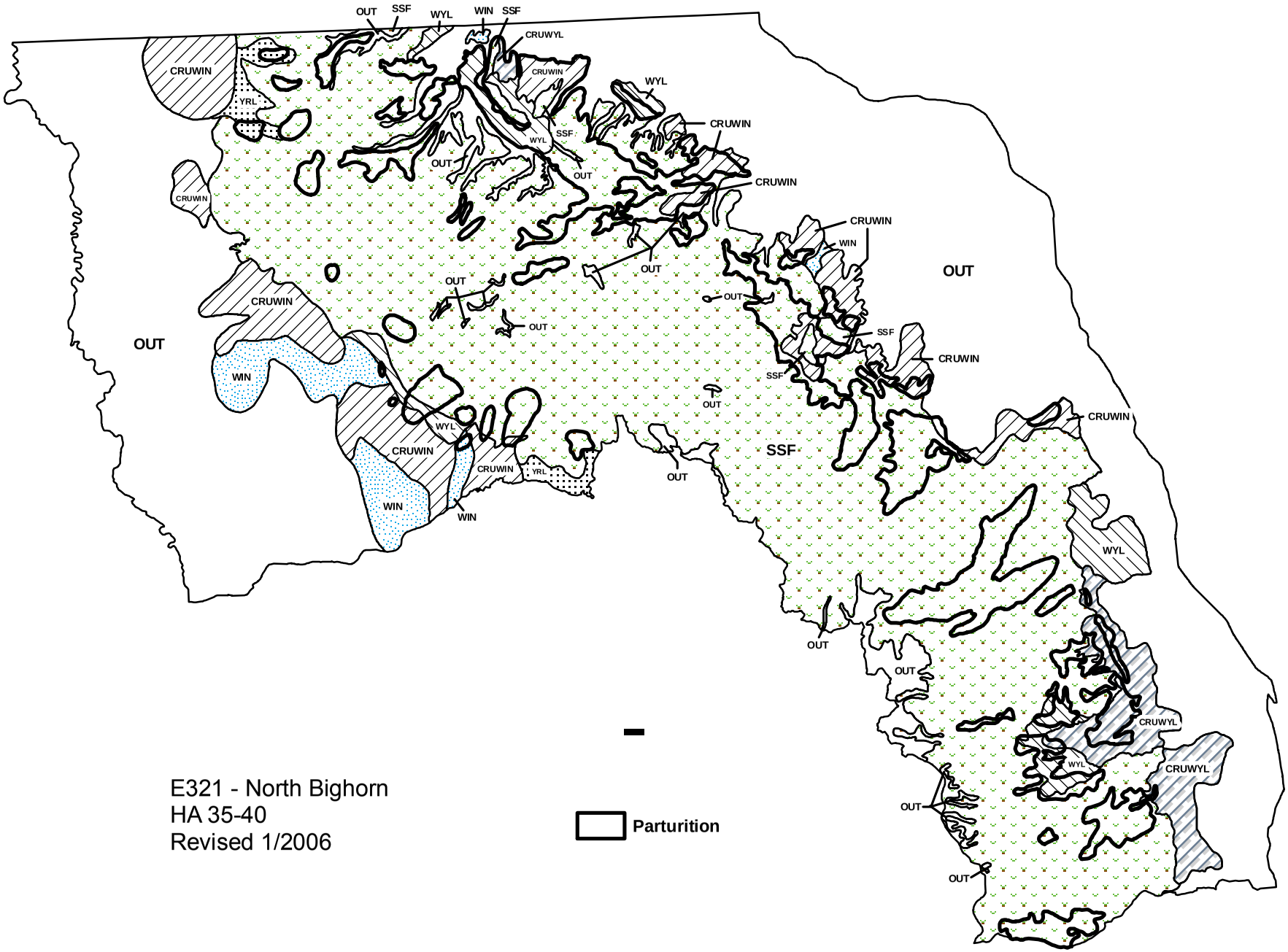
Gilead Fire – Hunt Area 36

Lightning ignited the Gilead Fire on August 14th northwest of the Bud Love WHMA in elk Hunt Area 36. The ignition site was in the Gilead Creek drainage, a tributary to the Rock Creek Drainage which is characterized by extremely rugged terrain and continuous lodgepole pine habitats. The fire was most active the first week of September when it burned south through Firebox Park. Fire lines were constructed on the Bud Love WHMA and a burn out of mountain slope on the Bud Love WHMA occurred on September 7th.

The Bighorn National Forest closed a significant portion of elk Hunt Area 36 to unauthorized human presence during the most active fire period. This created some problems for archery elk hunters, particularly nonresidents with limited quota licenses, as a very limited portion of the hunt area outside of the Cloud Peak Wilderness Area was accessible.

The fire was active into October although growth was limited after mid-September. The fire burned approximately 8,200 acres. The burn is expected to benefit elk habitat by opening up areas within the expansive lodgepole pine stands occurring in the Rock Creek drainage. Part of the burn occurred in areas originally designated for a prescribed burn than never happened.

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Revised 1/2006
Parturition

2012 - JCR Evaluation Form

SPECIES: Elk | PERIOD: 6/1/2012 - 5/31/2013

HERD: EL322 - SOUTH BIGHORN

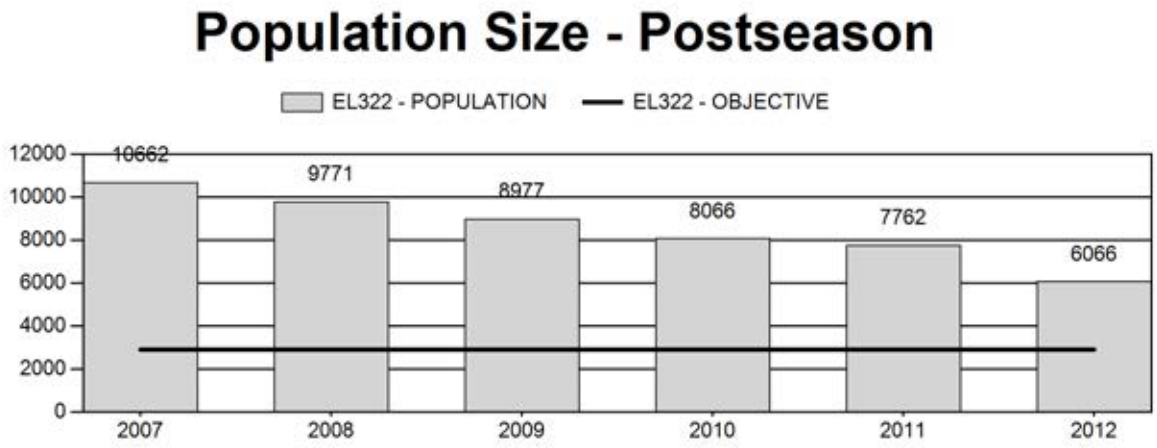
HUNT AREAS: 33-34, 47-49, 120 | PREPARED BY: DAN THIELE

	2007 - 2011 Average	2012	2013 Proposed
Population:	9,048	6,066	4,264
Harvest:	1,332	1,788	1,970
Hunters:	2,776	3,429	3,800
Hunter Success:	48%	52%	52%
Active Licenses:	2,879	3,581	3,900
Active License Percent:	46%	50%	51%
Recreation Days:	18,781	25,313	28,000
Days Per Animal:	14.1	14.2	14.2
Males per 100 Females	28	21	
Juveniles per 100 Females	38	34	

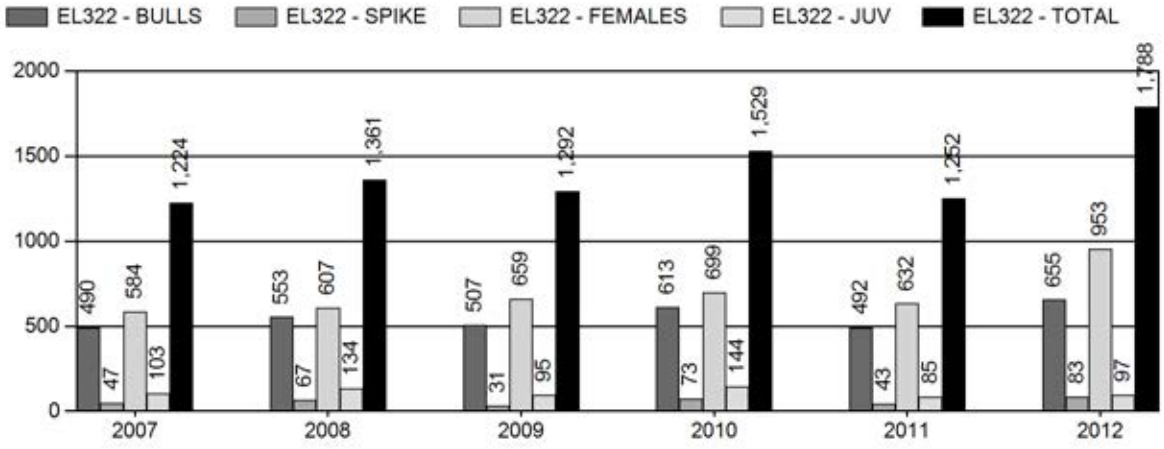
Population Objective:	2,900
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	109%
Number of years population has been + or - objective in recent trend:	10
Model Date:	5/22/2013

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

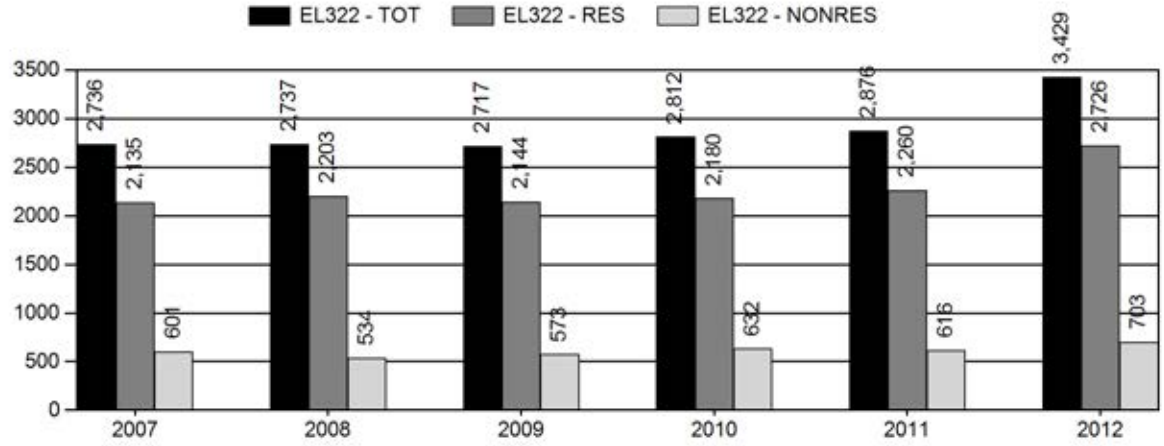
	JCR Year	Proposed
Females ≥ 1 year old:	20%	34%
Males ≥ 1 year old:	26%	50%
Juveniles (< 1 year old):	7%	0%
Total:	19%	31%
Proposed change in post-season population:	-8%	-20%



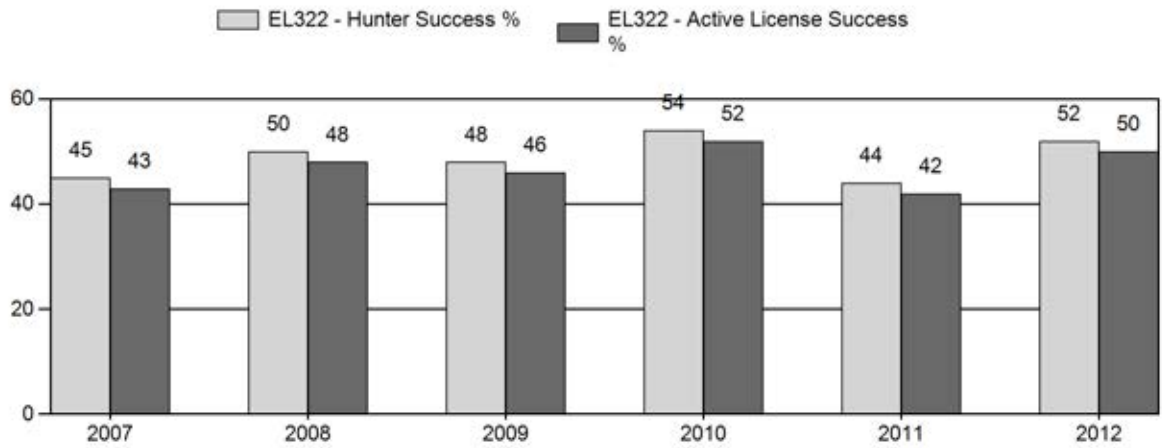
Harvest



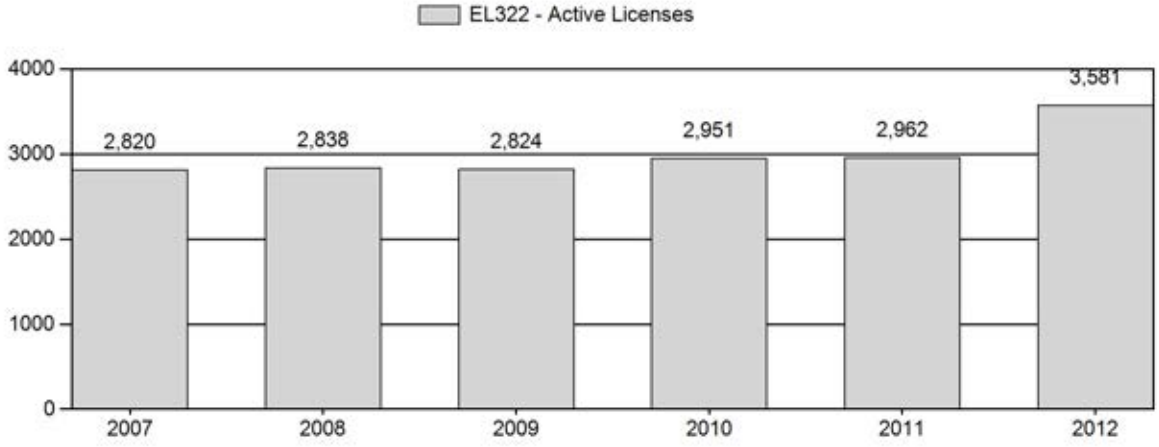
Number of Hunters



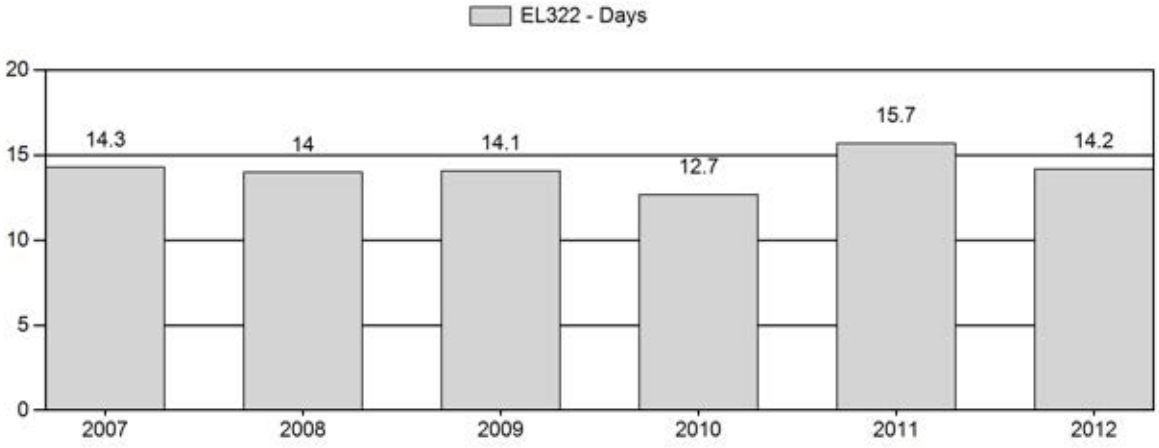
Harvest Success



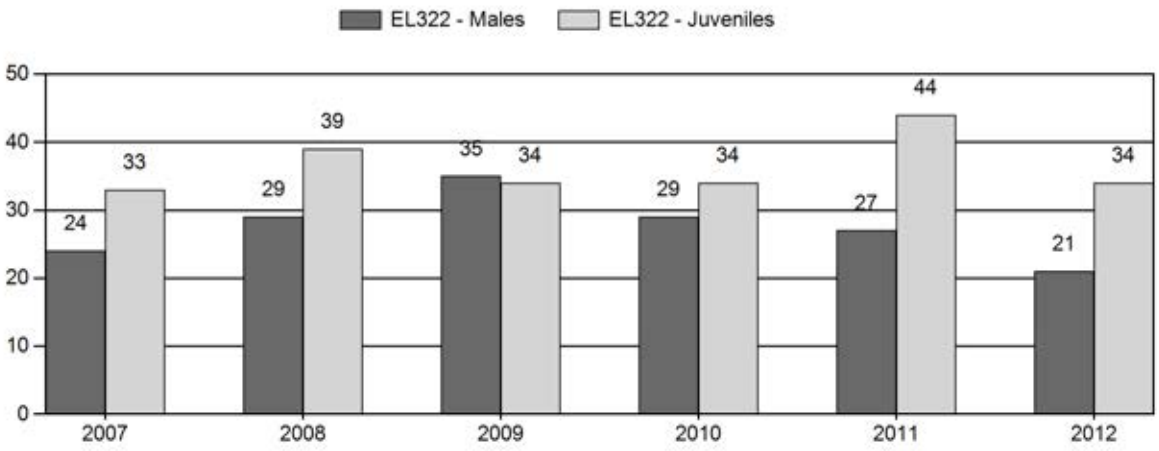
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL322 - SOUTH BIGHORN

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	10,662	115	96	211	15%	873	64%	290	21%	1,374	422	13	11	24	± 2	33	± 3	27
2008	9,771	150	129	279	17%	967	60%	373	23%	1,619	557	16	13	29	± 2	39	± 3	30
2009	8,977	129	133	262	21%	757	59%	254	20%	1,273	492	17	18	35	± 3	34	± 3	25
2010	8,066	156	163	319	17%	1,119	61%	385	21%	1,823	458	14	15	29	± 2	34	± 2	27
2011	7,762	304	250	554	16%	2,064	58%	914	26%	3,532	660	15	12	27	± 1	44	± 2	35
2012	6,066	215	167	382	14%	1,814	65%	612	22%	2,808	438	12	9	21	± 1	34	± 1	28

2013 HUNTING SEASONS
SOUTH BIGHORN ELK HERD (EL322)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	Limitations
33	1	Oct. 9	Oct. 31	200	Limited quota licenses; any elk
		Nov. 1	Dec. 15		Unused Area 33 Type 1 licenses valid for antlerless elk
	4	Aug. 15	Sep. 30	150	Limited quota licenses; antleress elk valid on private lands east of Buffalo Creek and the Bar C Road
		Oct. 9	Dec. 15		Unused Area 33 Type 4 licenses valid in the entire area
	6	Oct. 9	Dec. 15	300	Limited quota licenses; cow or calf elk
34	1	Oct. 15	Nov. 15	800	Limited quota licenses; any elk
		Nov. 16	Dec. 15		Unused Area 34 Type 1 licenses valid for antlerless elk
	6	Oct. 15	Dec. 15	600	Limited quota licenses; cow or calf valid off National Forest
47	1	Oct. 9	Oct. 31	250	Limited quota licenses; any elk
	2	Oct. 9	Oct. 31	25	Limited quota licenses; any elk valid in Fremont County
		Nov. 1	Dec. 22		Unused Area 47 Type 1 and Type 2 licenses valid for antlerless elk
	6	Oct. 9	Dec. 22	300	Limited quota licenses; cow or calf
48	1	Oct. 9	Oct. 31	300	Limited quota licenses; any elk
	4	Oct. 9	Oct. 31	50	Limited quota licenses; antlerless elk
	6	Oct. 9	Oct. 31	500	Limited quota licenses; cow or calf
		Nov. 9	Dec. 15		Unused Area 48 Type 1, Type 4 and Type 6 licenses valid for antlerless elk
49	1	Oct. 9	Oct. 31	300	Limited quota licenses; any elk
		Nov. 1	Dec. 22		Unused Area 49 Type 1 licenses valid for antlerless elk
	4	Oct. 9	Dec. 22	50	Limited quota licenses; antlerless elk
	6	Sep. 1	Dec. 22	150	Limited quota licenses; cow or calf
	7	Oct. 9	Dec. 22	500	Limited quota licenses; cow or calf
120	1	Oct. 9	Oct. 31	150	Limited quota licenses; any elk
		Nov. 1	Nov. 30		Unused Area 120 Type1 licenses valid for antlerless elk
	4	Oct. 9	Nov. 30	75	Limited quota licenses; antlerless elk
	6	Oct. 9	Nov. 30	75	Limited quota licenses; cow or calf

Hunt Area	Type	Quota change from 2012
33	4	+100
	6	+200
47	1	+50
	6	+50
49	6	+75
120	1	+50
	5	-25 (eliminate)
	6	+25
Herd Unit Total	**1**	**+100**
	4	**+100**
	5	**-25**
	6	**+350**

Management Evaluation
Current Postseason Population Management Objective: 2,900
Management Strategy: Recreational
2012 Postseason Population Estimate: ~6,100
2013 Proposed Postseason Population Estimate: ~4,300

Herd Unit Issues

The South Bighorn Elk Herd Unit has a post-season population objective of 2,900 elk. The management strategy is recreational management. The objective and management strategy were last revised in 1998 when Areas 33 and 34 from the Southeast Bighorn Herd Unit were combined with Areas 47, 48, 49 and 120 from the Upper Nowood-Copper Mountain Herd Unit. The herd has exceeded the population objective since it was created. The objective and management strategy will be reviewed and updated in the future.

Since 1997, hunting seasons have been liberalized with increased any elk and antlerless elk license quotas, the addition of cow/calf licenses and extended hunting seasons. Harvest has increased significantly, although at less than desired levels because of the inability to sell antlerless and cow/calf licenses in some hunt areas. Lack of access, particularly in Areas 33 and 34, has hampered efforts to achieve harvest objectives.

Weather

Weather in the South Bighorn Herd Unit turned extremely warm and dry after several good moisture years. The January 2012 Palmer Drought Index for Climate Divisions 4 (Bighorn drainage) and 5 (Powder, Little Missouri and Tongue drainages) showed “very moist” and “extreme moist” conditions, respectively. By January 2013 conditions had progressed to “mid-range” in Division 4 and “extreme drought” in Division 5. Total precipitation at the Bighorn Basin and Powder River drainage snowtel sites for the previous 12 months was 93% and 97%, respectively, as of May, 22 2013.

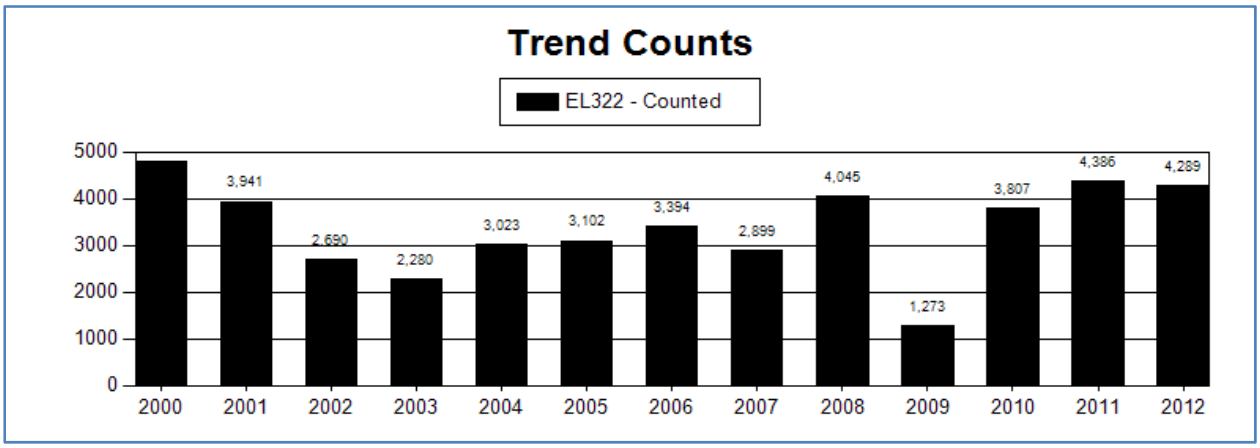
Habitat

There are no habitat transects for grass production in this herd unit. The south Bighorn Herd Unit is primarily private, state and BLM lands with a limited amount of U.S. Forest Service in Area 34. Cattle and sheep grazing is common. With drought conditions developing in 2012, heavy utilization occurred. If drought conditions persist, landowners may have less tolerance for high elk numbers.

Field Data

Winter trend counts remained relatively stable with 4,289 elk observed in 2012, comparable to 4,386 elk in 2011. A high of 4,796 elk were observed in 2000 (Figure 1). Given that license quotas have significantly increased in recent years and hunter success and hunter effort trends remain favorable, it is unreasonable to conclude this population is decreasing to the extent predicted by the model. It is anticipated an alternative objective will be selected during the forthcoming objective review.

Figure 1. South Bighorn Elk Herd Unit Winter Trend Counts, 2000-2012.



Harvest Data

Harvest data does not indicate bull numbers, or elk numbers, are significantly decreasing. Type 1 hunter success remained favorable in 2012 and harvest composition showed 88% of the bull harvest was comprised of adult bulls.

Active license numbers (~3,600) and harvest (1,800) reached new highs in 2012 while hunter success and active license success each exceeded 50%. Hunter effort was comparable to the five year average at 14.3 days per animal harvested. Even so, harvest objectives were not met as 250 cow/calf licenses went unsold in four hunt areas. More than one-half of these were in Area 34 where hunter access remains problematic.

Hunter satisfaction responses were very positive reflecting high hunter success, quality bulls and long seasons. At the herd unit scale, 77% of hunters responded positively to their hunting experience whereas only 13% responded negatively and 11% provided a neutral response. At the hunt area level, positive responses ranged from 67% in Area 48 to 90% in Area 120. No hunt area had a negative response greater than 17%.

Hunter access is largely contingent on private land access. Seven Walk-in Areas provide access to more than 24,500 acres of private land and adjacent BLM and state lands, most of which are

located in Area 120. In addition, two Hunter Management Areas (HMA) provide hunter opportunity in Areas 47 and 48.

Population

The 2012 post-season population is estimated at about 6,100 elk with the population exhibiting a steep decline from more than 10,000 elk in 2007. The population estimate is generated from the newly adopted EXCEL spreadsheet model (SCJ/SCA) which is producing similar results and trends as the POP-II model. This population estimate and trend are considered questionable due to poor model alignment (AIC score 695) based on harvest data, postseason classifications and winter trend counts. It is more likely the population is stable to slightly decreasing. Declining bull ratios are contributing to the model's declining population trend. Representative bull ratios are difficult to determine because adult bulls are segregated from wintering cow calf herds with detection varying year to year.

Management Summary

Changes for the 2013 season included extending the Areas 33 and 34 closing dates to December 15 to correspond with Area 48. Running the season later will target elk that migrate into Area 33 to winter. In addition, an early Area 33 Type 4 season opening was added for private lands in the eastern one-half of the area to address depredation concerns on irrigated hay meadows. The Area 33 Type 4 and Type 6 quotas were increased by 100 and 200 licenses, respectively. Winter counts continue to increase indicating a significant increase in harvest is needed to reduce elk numbers.

In Area 47, the Type 1 and Type 6 quotas were increased by 50 licenses each and the split season dates in November and December were eliminated to allow for additional harvest and hunter opportunity. Landowners continue to express interest in increasing harvest and have been very involved in the Copper Mountain HMA. Since the Copper Mountain HMA was initiated in 2010, Area 47 harvest has increased by over 100%.

In Area 48, the split season November opening date was moved to November 9 to coincide with a Saturday opener and the season will close a week earlier. The earlier closing date will address one landowner's concern over the long season. This landowner is very influential in allowing hunter access.

In Area 49 the Type 6 quota was increased by 75 licenses. This will provide for additional early season harvest when potential damage issues arise and some landowners are allowing hunter access.

The Area 120 Type 1 quota was increased 50 licenses and the Type 5 license was eliminated with those licenses converted to Type 6 licenses.

This population is over objective and seasons are designed to maintain hunting pressure on the female segment of the herd with increased quotas and extended seasons. License increases were notable this year with an increase of 100 any, 75 antlerless and 350 cow/calf licenses. If available licenses sell, harvest should increase over the 2012 total. A questionable postseason population of 4,300 elk is projected.

INPUT	
Species:	Elk
Biologist:	Dan Thiele
Herd Unit & No.:	South Bighorn Elk
Model date:	05/22/13

☐ Clear form

MODELS SUMMARY		Fit	Relative AICc	Check best model to create report	Notes
CJ,CA	Constant Juvenile & Adult Survival	714	724	☐ CJ,CA Model	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	684	696	☑ SCJ,SCA	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival	355	463	☐ TSJ,CA Model	
TSJ,CA,MSC	Time-Specific Juv, Constant Adult Survival, Male survival coefficient	499	595	☐ TSJ,CA,MSC M	

Population Estimates from Top Model

Year	Posthunt Population Est.		Trend Count	Predicted Prehunt Population				Predicted Posthunt Population				Objective
	Field Est	Field SE		Juveniles	Total Males	Females	Total	Juveniles	Total Males	Females	Total	
1996			4246	2769	1748	7119	11636	2659	1529	6723	10911	2900
1997			3616	2691	2429	7519	12640	2634	2042	6955	11631	2900
1998			3484	3451	2660	7474	13585	3349	2274	7062	12685	2900
1999			4383	2381	3066	7758	13204	2203	2523	7209	11936	2900
2000			4796	3017	3024	7616	13657	2842	2512	6908	12263	2900
2001			3941	2285	3173	7481	12938	2122	2658	6790	11570	2900
2002			2690	3328	3135	7185	13648	3169	2642	6537	12348	2900
2003			2280	2442	3382	7198	13022	2272	2836	6470	11578	2900
2004			3023	2723	3347	6909	12979	2586	2647	6364	11597	2900
2005			3102	2240	3240	6883	12364	2128	2665	6244	11037	2900
2006			3394	2180	3144	6651	11975	2073	2578	6011	10663	2900
2007			2899	2029	3045	6409	11483	1916	2454	5767	10137	2900
2008			4045	2255	2884	6130	11269	2107	2202	5463	9772	2900
2009			1273	1834	2685	5880	10399	1730	2093	5155	8978	2900
2010			3807	1781	2484	5485	9749	1623	1729	4716	8067	2900
2011			4386	2012	2100	5027	9139	1918	1512	4332	7762	2900
2012			4289	1347	1961	4725	8033	1240	1149	3677	6066	2900
2013				1081	1436	3913	6431	960	710	2593	4264	2900
2014												2900
2015												2900
2016												2900
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

Survival and Initial Population Estimates

Year	Annual Juvenile Survival Rates			Annual Adult Survival Rates		
	Model Est	Field Est	SE	Model Est	Field Est	SE
1996	0.70			0.98		
1997	0.50			0.98		
1998	0.50			0.98		
1999	0.50			0.98		
2000	0.50			0.98		
2001	0.50			0.98		
2002	0.50			0.98		
2003	0.50			0.98		
2004	0.50			0.98		
2005	0.50			0.98		
2006	0.50			0.98		
2007	0.50			0.98		
2008	0.50			0.98		
2009	0.50			0.98		
2010	0.50			0.98		
2011	0.50			0.98		
2012	0.50			0.98		
2013	0.50			0.98		
2014						
2015						
2016						
2017						
2018						
2019						
2020						
2021						
2022						
2023						
2024						
2025						

Parameters:	Optim cells
Juvenile Survival =	0.500
Adult Survival =	0.980
Initial Total Male Pop/10,000 =	0.153
Initial Female Pop/10,000 =	0.672

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%
Total Bulls Adjustment Factor	75%

Year	Classification Counts: Juvenile/Female Ratio			Classification Counts: Total Male/Female Ratio				Harvest					Segment Harvest Rate (% of Prehunt Segment)	
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/ bull adj	Field Est w/o bull adj	Field SE	Juv	Yrl males	2+ Males	Females	Total Harvest	Total Males	Females
1996		39.54	1.57	22.75	41.56	31.17	1.35	100	37	162	360	659	12.5	5.6
1997		37.87	1.55	29.36	45.18	33.88	1.44	52	80	272	513	917	15.9	7.5
1998		47.43	2.49	32.20	39.48	29.61	1.84	92	57	294	375	818	14.5	5.5
1999		30.57	2.74	35.00	46.29	34.72	2.97	161	97	396	499	1153	17.7	7.1
2000		41.14	1.80	36.36	29.24	21.93	1.22	159	48	417	643	1267	16.9	9.3
2001		31.26	1.45	39.14	32.96	24.72	1.25	148	83	385	628	1244	16.2	9.2
2002		48.48	2.96	40.42	33.29	24.97	1.95	145	17	431	589	1182	15.7	9.0
2003		35.11	2.34	43.83	26.11	19.58	1.65	155	33	463	662	1313	16.1	10.1
2004		40.63	2.37	41.59	34.58	25.94	1.79	125	48	589	495	1257	20.9	7.9
2005		34.08	2.27	42.68	45.59	34.20	2.27	102	78	445	581	1206	17.8	9.3
2006		34.49	1.96	42.89	30.99	23.24	1.54	97	31	483	582	1193	18.0	9.6
2007		33.22	2.25	42.56	32.23	24.17	1.85	103	47	490	584	1224	19.4	10.0
2008		38.57	2.35	40.31	38.47	28.85	1.96	134	67	553	607	1361	23.6	10.9
2009		33.55	2.43	40.60	46.15	34.61	2.48	95	31	507	659	1292	22.0	12.3
2010		34.41	2.03	36.66	38.01	28.51	1.81	144	73	613	699	1529	30.4	14.0
2011		44.28	1.76	34.89	35.79	26.84	1.28	85	43	492	632	1252	28.0	13.8
2012		33.74	1.58	31.26	27.34	20.51	1.17	97	83	655	953	1788	41.4	22.2
2013		37.04	1.94	27.39	35.56	26.67	1.58	110	60	600	1200	1970	50.5	33.7
2014														
2015														
2016														
2017														
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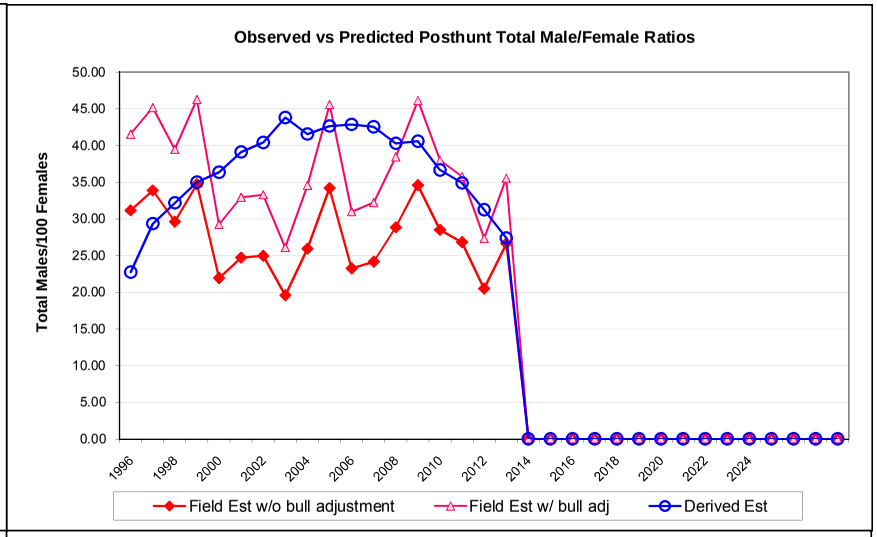
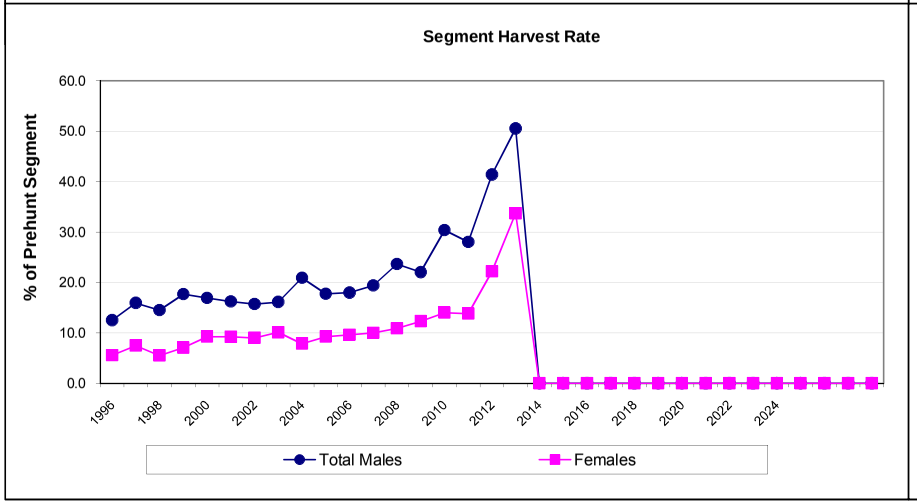
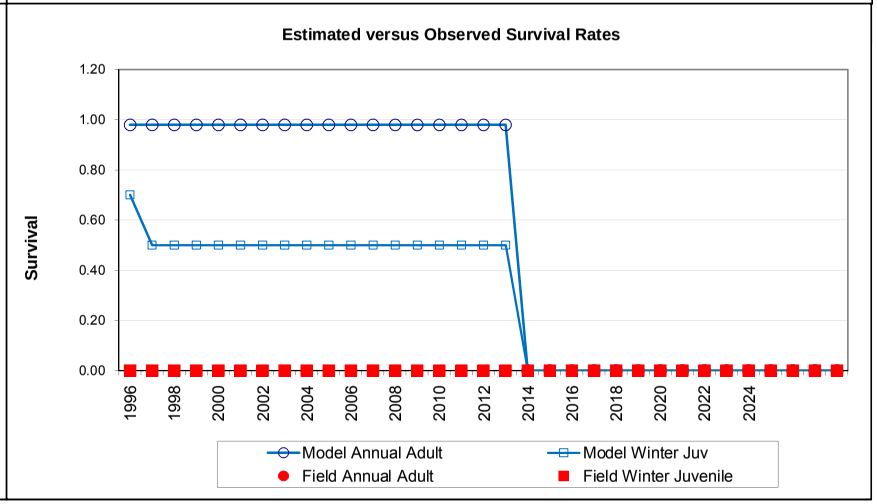
2019														
2020														
2021														
2022														
2023														
2024														
2025														

FIGURES

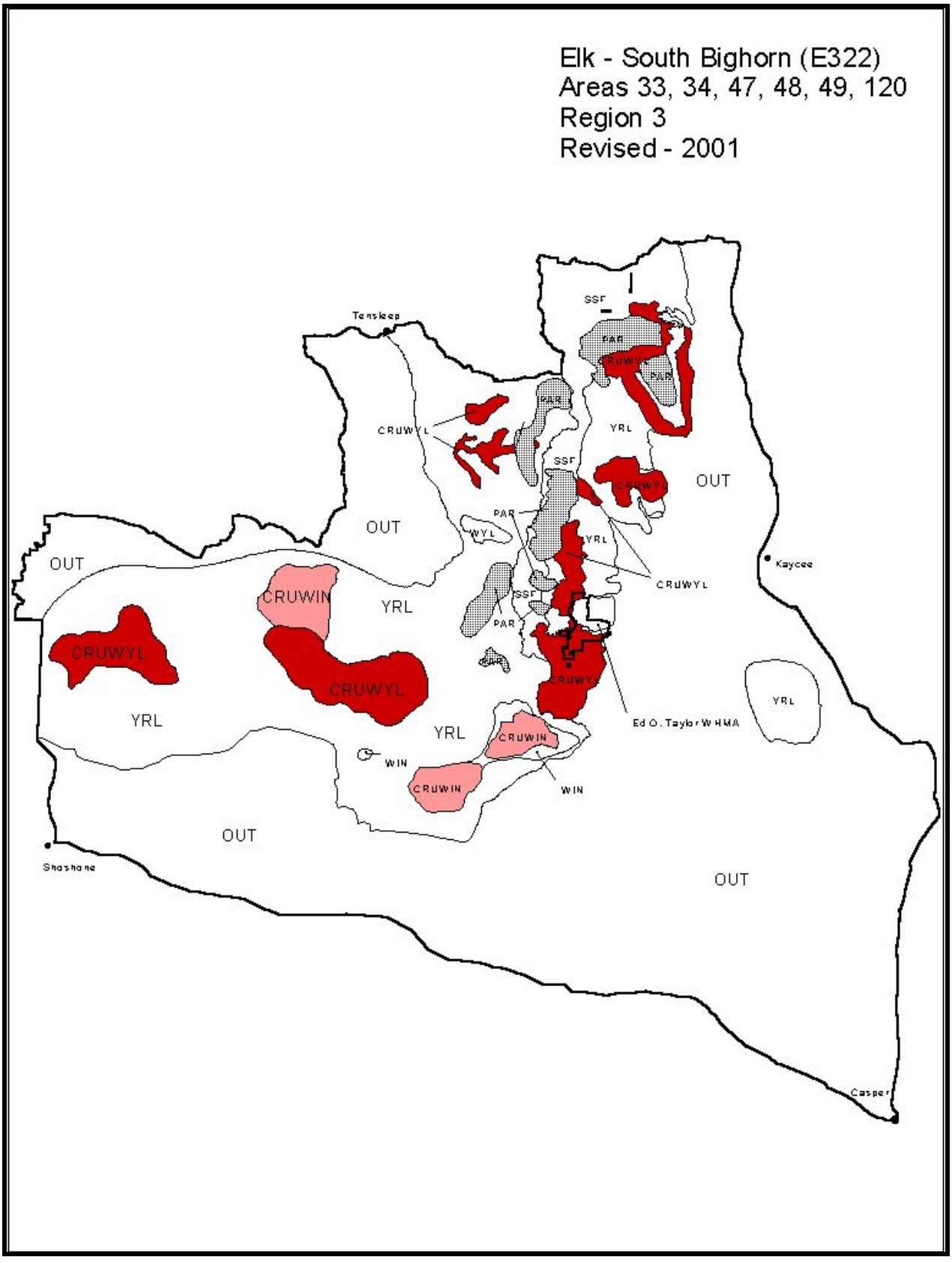






Comments: Unreliable model output possibly due to widely fluctuating bull cow ratios

END

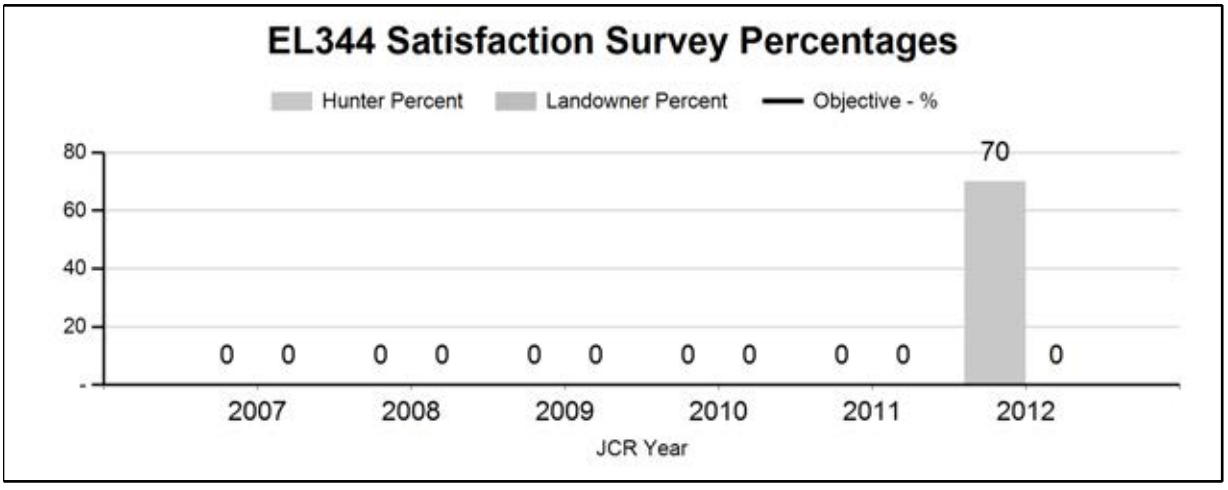

Elk - South Bighorn (E322)
Areas 33, 34, 47, 48, 49, 120
Region 3
Revised - 2001
Tensleep
SSF
PAR
CRUWYL
YRL
OUT
Kaycee
CRUWIN
WIN
Ed O. Taylor WHMA
Shoshone
Casper

2012 - JCR Evaluation Form

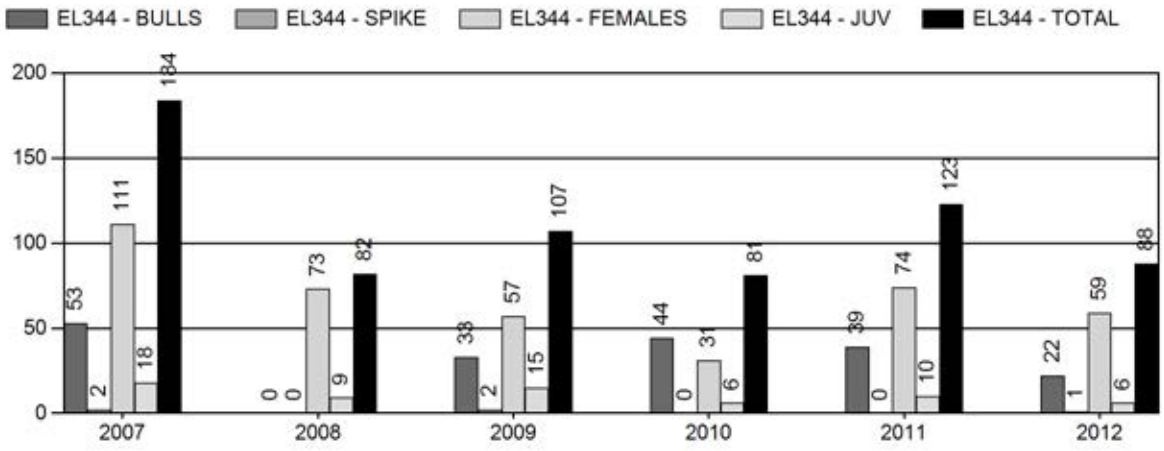
SPECIES: Elk
PERIOD: 6/1/2012 - 5/31/2013
HERD: EL344 - ROCHELLE HILLS
HUNT AREAS: 113, 123
PREPARED BY: ERIKA PECKHAM

	2007 - 2011 Average	2012	2013 Proposed
Hunter Satisfaction Percent	0%	70%	60%
Landowner Satisfaction Percent	0%	0%	60%
Harvest:	115	88	125
Hunters:	166	164	200
Hunter Success:	69%	54%	62%
Active Licenses:	166	54%	200
Active License Percentage:	69%	54%	62%
Recreation Days:	639	854	1,150
Days Per Animal:	5.6	9.7	9.2
Males per 100 Females:	46	41	
Juveniles per 100 Females	40	60	

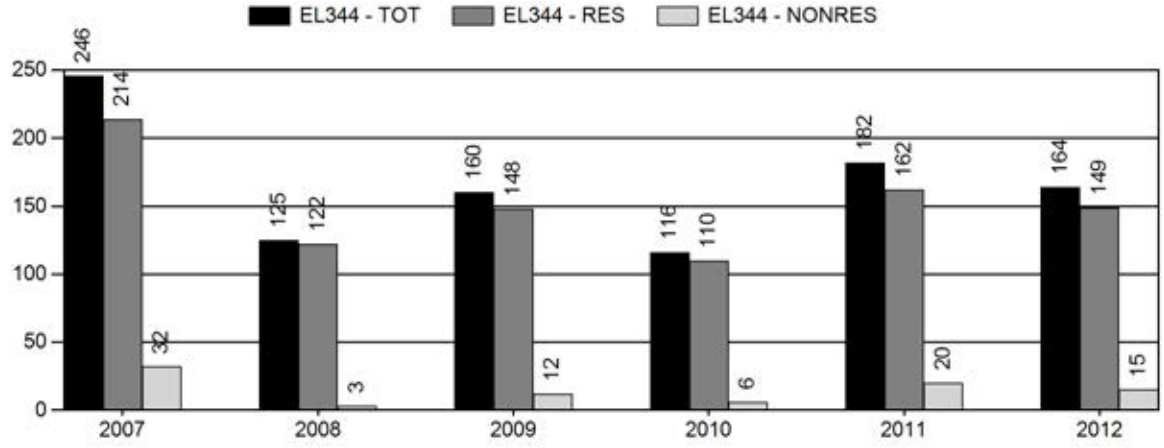
Satisifaction Based Objective	60%
Management Strategy:	Private
Percent population is above (+) or (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0



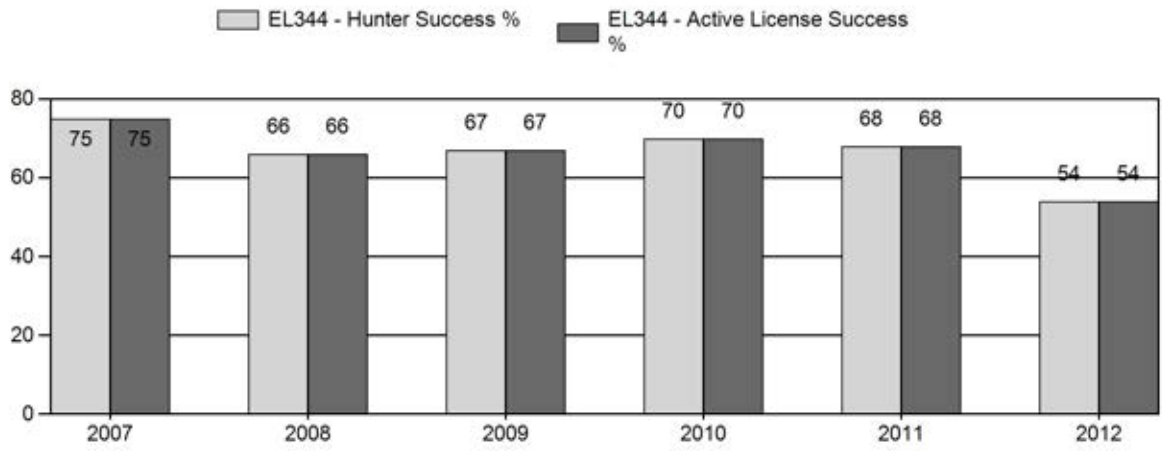
Harvest



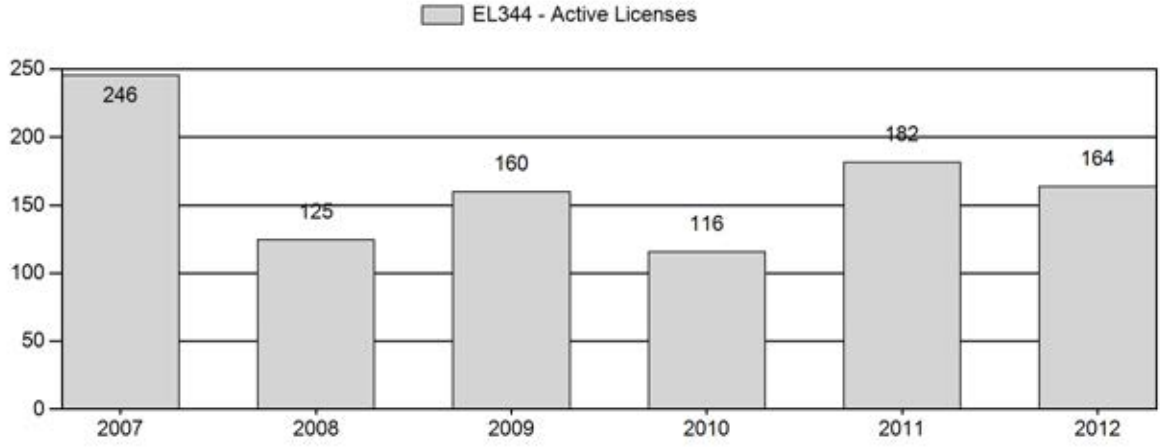
Number of Hunters



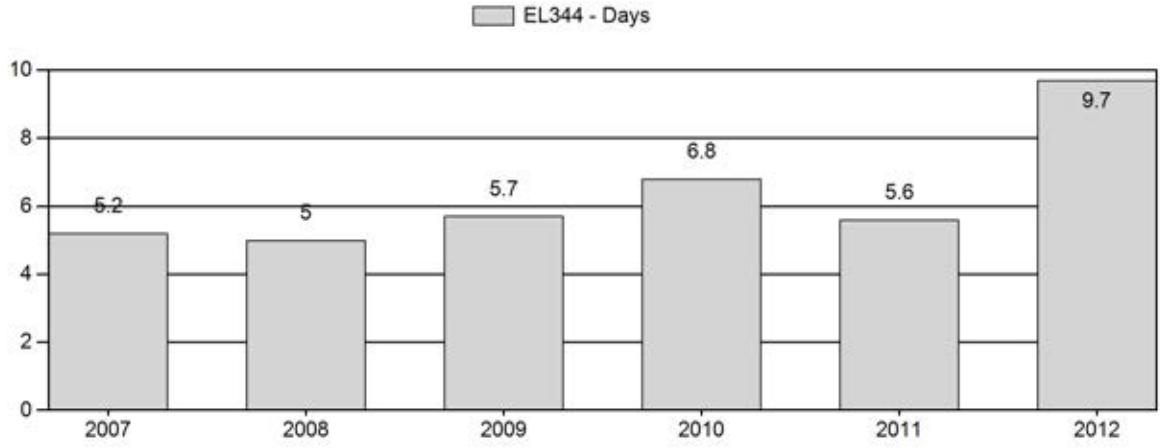
Harvest Success



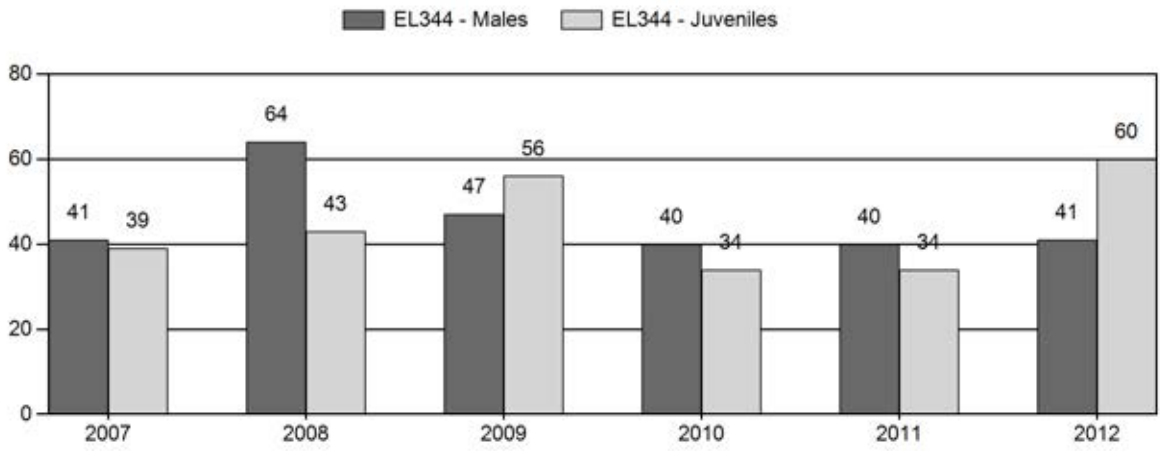
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Elk Herd EL344 - ROCHELLE HILLS

		MALES				FEMALES		JUVENILES				Males to 100 Females				Young to		
Year	Post Pop	Ylg	Adult	Total	%	Total	%	Total	%	Tot Cls	Cls Obj	Yling	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	644	15	40	55	23%	134	56%	52	22%	241	230	11	30	41	± 0	39	± 0	28
2008	712	36	107	143	31%	223	48%	97	21%	463	313	16	48	64	± 4	43	± 3	27
2009	754	67	53	120	23%	254	49%	141	27%	515	443	26	21	47	± 0	56	± 0	38
2010	728	68	57	125	23%	316	58%	106	19%	547	350	22	18	40	± 1	34	± 1	24
2011	741	68	57	125	23%	316	58%	106	19%	547	329	22	18	40	± 3	34	± 2	24
2012	0	32	20	52	20%	128	50%	77	30%	257	0	25	16	41	± 0	60	± 0	43

2013 HUNTING SEASONS
ROCHELLE HILLS ELK HERD (EL344)

Hunt Area	Type	Dates of Seasons Opens	Closes	Quota	Limitations
113	4	Nov. 5	Nov. 30	25	Limited quota licenses; Antlerless elk
123	1	Sep. 10	Oct. 10	75	Limited quota licenses; Any elk
	4	Nov. 5	Nov. 30	50	Limited quota licenses; Antlerless elk
	6	Nov. 5	Nov. 30	50	Limited quota licenses; Cow or calf
Archery		Sep. 1	Sep. 9		

Hunt Area	Type	Quota change from 2012
113	1	-30
	4	-35
123	1	+75
	4	-50
	6	+50
Herd Unit Total	**1**	**+45**
	4	**-85**
	6	**+50**

Management Evaluation
Current Landowner/Hunter Satisfaction Management Objective: 60%
Management Strategy: Private Land
Hunter Satisfaction Estimate: 70%
Landowner Satisfaction Estimate: >60%

Herd Unit Issues

The management objective for the Rochelle Hills Elk Herd Unit is based on landowner and hunter satisfaction. The management strategy is private land management strategy. The objective and management strategy were last revised in 2012.

A difficulty with managing this herd is access. The majority of the elk in Area 123 are found on private land and the opinions of landowners on the number of elk are not always the same. The

elk tend to concentrate in certain areas at particular times of the year so perceptions differ on the number of licenses needed to manage harvest.

Weather

Weather conditions throughout 2012 and into 2013 were extremely dry and warmer than normal. The winters of 2011-2012 and 2012-13 were mild and did not see much for snow accumulation. Although the spring and summer of 2012 were drier than normal, it appears that the cow to calf ratio has not suffered.

Habitat

There is no habitat transect located within in the herd unit. Observations from field personnel indicated that in particular, the southern portion of Hunt Area 113 appeared to be incredibly dry, with very little vegetation in certain areas. If there is another dry year, it would appear that it could adversely affect the elk in these areas by further reducing available forage.

Field Data

During the aerial classification survey in 2012 there were 256 individuals classified, however due to time constraints and weather, it is likely that many more were missed. In 2012 the calf to cow ratio was 60 per 100, which is the highest recorded for this herd. The number of animals classified has fluctuated over the past several years, however, in general has been on an upward trend. In 2011 there were 547 animals classified which is the highest on record. One problem associated with the management of this herd is achieving adequate sample sizes during classification surveys. This is a large geographical area, with steep, forested terrain, and this makes for difficulty in spotting elk in the budgeted flight time. A mid-winter trend count was planned to be flown in 2012-13, however the weather conditions did not cooperate, with much of this area staying open for most of the winter. Overall, this population has likely been increasing over the years, based on field personnel and landowner observations.

As this herd is managed based upon landowner and hunter satisfaction, we are aiming for at least 60% of landowners and 60% of hunters to be satisfied. The harvest survey indicated that 70% of hunters were satisfied with the 2012 season. An annual landowner meeting is held in January for Hunt Area 123. As this Hunt Area is predominantly private, it is crucial that a meeting is held to acquire feedback from the landowners. At this meeting the majority of landowners were in favor of the proposed season. This being the first year of managing based on satisfaction, we did poll the landowners and did meet the 60% satisfaction, however the information was not gathered in the appropriate format to incorporate into the JCR database. As Hunt Area 113 has more public access, it was decided that personnel would meet individually with landowners. All but one landowner desired a more conservative season in Hunt Area 113.

Harvest

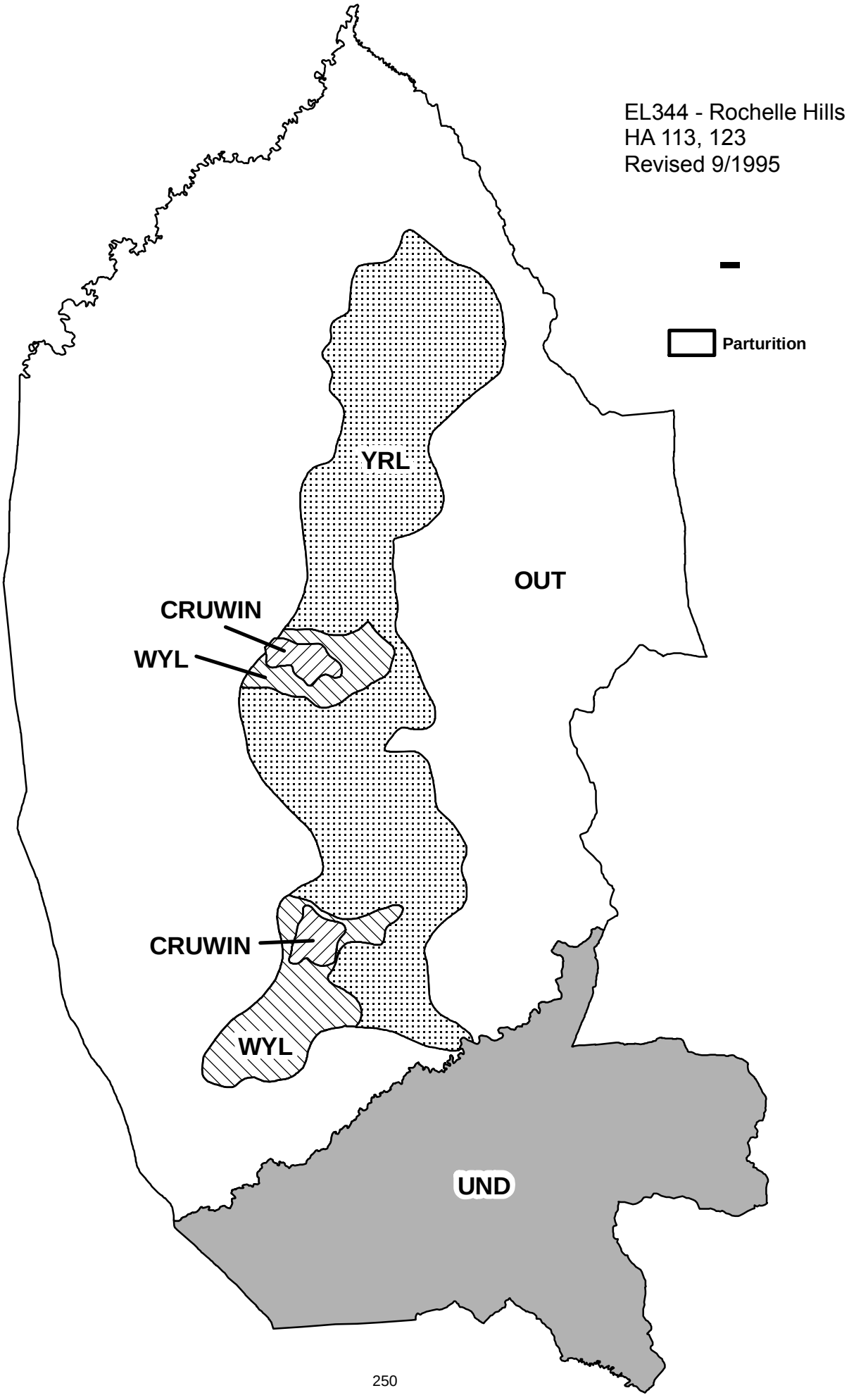
Historically, this herd has been hunted conservatively, with Hunt Areas 113 and 123 being closed for two years at a time to allow for trophy bull growth. While this regimen of hunting seasons had the potential to produce high quality bulls, it has also resulted in very high bull to cow ratios in the past. However, the last few years the ratio has hovered around 40 bulls per 100 cows. This herd has great potential for continued growth if access cannot be somewhat improved, particular in Area 123. In portions of Hunt Area 113 there is a reasonable amount of public land, which allows for a reasonable harvest.

Population

The Rochelle Hills elk herd population appears to have increased in recent years. There is no working population model for this herd. The 2012 field estimate is around 700 elk. If sufficient harvest is achieved in 2013, there is the potential to reduce herd numbers slightly.

Management Summary

In 2012, there were both Type 1 and Type 4 licenses issued in Hunt Area 113 and just Type 4 licenses issued for Hunt Area 123. To attempt a larger than normal harvest in Hunt Area 123 in 2013 both Type 4 and Type 6 licenses were made available. In area 113, less overall licenses will be available. As previously stated, the majority of landowners desire to see more elk in Hunt Area 113. However, as drought conditions may persist into 2013, it seems realistic to have 25 Type 4 licenses available, in the event that numbers exceed what landowners and habitat conditions will tolerate.


EL344 - Rochelle Hills
HA 113, 123
Revised 9/1995
Parturition
YRL
OUT
CRUWIN
WYL
CRUWIN
WYL
UND